

Course Descriptions

001 - Greenhouse Grower/Plant Propagation Technician

- 10001108 Plant Propagation (2 cr.)** Addresses production and propagation techniques for growing plants. Students will explore using a variety of equipment and methods.
- 10001111 Introduction to Horticulture (3 cr.)** Provides an overview of the horticulture profession, including its role and importance throughout history. Current trends and career opportunities will be covered. Particular attention is given to horticulture crops, plant classification, their use, and the interrelationships between the environment, plant growth and plant development.
- 10001113 Greenhouse and Turf Pest Management (3 cr.)** Focuses on training to successfully pass the Wisconsin Department of Agriculture, Trade and Consumer Protection's Pesticide Applicator Certification Exam (which is proctored in this class). Additionally, students will be familiarized with chemical handling, mixing, calibration and application via field exercises.
- 10001115 Tissue Culture Propagation (2 cr.)** Teaches students how to set up a tissue culture lab and propagate plants, in vast numbers, using laboratory conditions. Class will propagate several types of plant material.
- 10001119 Greenhouse Transition to Summer (1 cr.)** Is designed to give the learner the experience of working in a greenhouse during the transitional period of spring to summer plant tasks and needs. This class will include plant care both in greenhouse and in shade house. Also covered will be after care of greenhouse, hoop houses, and shade house facilities.
- 10001121 Hydroponic Growing & Systems (2 cr.)** Explores various hydroponic systems, their specific plant material, and growing conditions. Students will work hands-on with several units and plant materials.
- 10001125 Greenhouse Management & Control Systems (2 cr.)** Examines the day-to-day operation of a greenhouse to include operating systems, spatial management and planning crop timing.
- 10001140 Plant Diagnostics (2 cr.)** Covers the science of making proper diagnoses of plant insects and disease problems and appropriate control strategies. Students will learn the difference between signs and symptoms and identification of problem plants.

001 - Greenhouse Operations

- 10001108 Plant Propagation (2 cr.)** Addresses production and propagation techniques for growing plants. Students will explore using a variety of equipment and methods.
- 10001111 Introduction to Horticulture (3 cr.)** Provides an overview of the horticulture profession, including its role and importance throughout history. Current trends and career opportunities will be covered. Particular attention is given to horticulture crops, plant classification, their use, and the interrelationships between the environment, plant growth and plant development.

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10001112 Horticulture Soils (3 cr.)	Explores the properties of soils and applies them to horticultural uses as a growing medium and as an engineering base for landscaping.
10001113 Greenhouse and Turf Pest Management (3 cr.)	Focuses on training to successfully pass the Wisconsin Department of Agriculture, Trade and Consumer Protection's Pesticide Applicator Certification Exam (which is proctored in this class). Additionally, students will be familiarized with chemical handling, mixing, calibration and application via field exercises.
10001115 Tissue Culture Propagation (2 cr.)	Teaches students how to set up a tissue culture lab and propagate plants, in vast numbers, using laboratory conditions. Class will propagate several types of plant material.
10001117 Equipment Operation, Horticulture (2 cr.)	Teaches students how to operate a variety of landscape equipment. Hands-on training will require the students to acquire an understanding of the safe operation of equipment. Focus will be on pre-operation, operation, and post-operation procedures and skills.
10001119 Greenhouse Transition to Summer (1 cr.)	Is designed to give the learner the experience of working in a greenhouse during the transitional period of spring to summer plant tasks and needs. This class will include plant care both in greenhouse and in shade house. Also covered will be after care of greenhouse, hoop houses, and shade house facilities.
10001121 Hydroponic Growing & Systems (2 cr.)	Explores various hydroponic systems, their specific plant material, and growing conditions. Students will work hands-on with several units and plant materials.
10001122 Interiorscaping (2 cr.)	Studies the identification, characteristics, and physical requirements of interior plants.
10001123 Landscape Management (3 cr.)	Uses a practical approach to training people in the basics of landscape supervision and management. The course emphasizes the application of theory and covers landscape management functions and the skills needed to perform those functions.
10001125 Greenhouse Management & Control Systems (2 cr.)	Examines the day-to-day operation of a greenhouse to include operating systems, spatial management and planning crop timing.
10001140 Plant Diagnostics (2 cr.)	Covers the science of making proper diagnoses of plant insects and disease problems and appropriate control strategies. Students will learn the difference between signs and symptoms and identification of problem plants.
10001145 Landscape Estimating and Technical Reports (3 cr.)	Covers landscape project cost estimating, proposal preparation, and professional written and verbal communication. Students determine landscape project material, equipment, and labor costs, and prepare project proposals, sales presentations, and a lien letter and letter of introduction.
10001158 Woody Ornamental Plant ID (3 cr.)	Explains plant classification and identification techniques. Students will utilize these techniques to properly name and identify commonly used deciduous and evergreen trees and shrubs. Culture and care will also be discussed.

Course Descriptions

10001159 Survey of Herbaceous Plants (3 cr.)	Studies commonly used annual, bulb and perennial herbaceous plants, with an emphasis on their use in the landscape, culture and care.
10001170 Fall Landscape Maintenance (3 cr.)	Studies the maintenance and care of woody plants, including evergreens, vines, garden flowers, bulbs and nursery stock. Discusses pruning, training, fertilizing, watering, planting, physical and chemical control of plant growth, transplanting, winterizing, weed control and production.
10001174 Landscape Design 1 (3 cr.)	Focuses on the landscape design process through the understanding of concepts such as outdoor room, design principles, site function and form composition. The course also includes drafting, site analysis and graphics.
10102112 Business, Introduction to (3 cr.)	Provides an overview of the variety of activities in the world of business. It focuses on the responsibilities connected with operating a business from both organizational and managerial viewpoints. It also examines the role of government in business.
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
10804107 College Mathematics (3 cr.)	This course is designed to review and develop fundamental concepts of mathematics in the areas of algebra, geometry, trigonometry, measurement and data. Algebra topics emphasize simplifying algebraic expressions, solving linear equations and inequalities with one variable, solving proportions and percent applications. Geometry and trigonometry topics include; finding areas and volumes of geometric figures, applying similar and congruent triangles, applying Pythagorean Theorem, and solving right triangles using trigonometric ratios. Measurement topics emphasize the application of measurement concepts and conversion techniques within and between U.S. customary and metric system to solve problems. Data topics emphasize data organization and summarization skills, including: frequency distributions, central tendency, relative position and measures of dispersion. Special emphasis is placed on problem solving, critical thinking and logical reasoning, making connections, and using calculators.

Course Descriptions

10809195 Economics (3 cr.)

This course is designed to give an overview of microeconomics, macroeconomics, and international economics. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues.

10809199 Psychology of Human Relations (3 cr.)

Explores the relationship between the general principles of psychology and our everyday lives. Students are given the opportunity to achieve a deepened sense of awareness of themselves and others. This understanding enables students to improve their relationships with others at work, in the family, and in society.

001 - Horticulture Technician

10001111 Introduction to Horticulture (3 cr.)

Provides an overview of the horticulture profession, including its role and importance throughout history. Current trends and career opportunities will be covered. Particular attention is given to horticulture crops, plant classification, their use, and the interrelationships between the environment, plant growth and plant development.

10001112 Horticulture Soils (3 cr.)

Explores the properties of soils and applies them to horticultural uses as a growing medium and as an engineering base for landscaping.

10001113 Greenhouse and Turf Pest Management (3 cr.)

Focuses on training to successfully pass the Wisconsin Department of Agriculture, Trade and Consumer Protection's Pesticide Applicator Certification Exam (which is proctored in this class). Additionally, students will be familiarized with chemical handling, mixing, calibration and application via field exercises.

10001117 Equipment Operation, Horticulture (2 cr.)

Teaches students how to operate a variety of landscape equipment. Hands-on training will require the students to acquire an understanding of the safe operation of equipment. Focus will be on pre-operation, operation, and post-operation procedures and skills.

10001123 Landscape Management (3 cr.)

Uses a practical approach to training people in the basics of landscape supervision and management. The course emphasizes the application of theory and covers landscape management functions and the skills needed to perform those functions.

10001145 Landscape Estimating and Technical Reports (3 cr.)

Covers landscape project cost estimating, proposal preparation, and professional written and verbal communication. Students determine landscape project material, equipment, and labor costs, and prepare project proposals, sales presentations, and a lien letter and letter of introduction.

Course Descriptions

10001158 Woody Ornamental Plant ID (3 cr.)	Explains plant classification and identification techniques. Students will utilize these techniques to properly name and identify commonly used deciduous and evergreen trees and shrubs. Culture and care will also be discussed.
10001159 Survey of Herbaceous Plants (3 cr.)	Studies commonly used annual, bulb and perennial herbaceous plants, with an emphasis on their use in the landscape, culture and care.
10001170 Fall Landscape Maintenance (3 cr.)	Studies the maintenance and care of woody plants, including evergreens, vines, garden flowers, bulbs and nursery stock. Discusses pruning, training, fertilizing, watering, planting, physical and chemical control of plant growth, transplanting, winterizing, weed control and production.
10001174 Landscape Design 1 (3 cr.)	Focuses on the landscape design process through the understanding of concepts such as outdoor room, design principles, site function and form composition. The course also includes drafting, site analysis and graphics.

001 - Horticulture/Landscape Entrepreneur

10001111 Introduction to Horticulture (3 cr.)	Provides an overview of the horticulture profession, including its role and importance throughout history. Current trends and career opportunities will be covered. Particular attention is given to horticulture crops, plant classification, their use, and the interrelationships between the environment, plant growth and plant development.
10001145 Landscape Estimating and Technical Reports (3 cr.)	Covers landscape project cost estimating, proposal preparation, and professional written and verbal communication. Students determine landscape project material, equipment, and labor costs, and prepare project proposals, sales presentations, and a lien letter and letter of introduction.
10145104 Entrepreneurship, Introduction to (3 cr.)	Provides students with opportunities to investigate, understand and apply the process of choosing entrepreneurship as a career path. Explores the entrepreneurial experience by focusing on an awareness of entrepreneurship, opportunity recognition, business concept development and preliminary feasibility testing. Students gain the knowledge, skills, concepts and strategies relevant for start-up and early-stage entrepreneurs. The practical hands-on approach encourages students to immerse themselves in the entrepreneurial

001 - Horticulture/Landscape Specialist

10001108 Plant Propagation (2 cr.)	Addresses production and propagation techniques for growing plants. Students will explore using a variety of equipment and methods.
10001109 Landscape Construction 2 (2 cr.)	Teaches students to work with advanced construction projects, materials and methods. Students learn to develop a mobilization plan and a management system for project implementation.

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10001111 Introduction to Horticulture (3 cr.)	Provides an overview of the horticulture profession, including its role and importance throughout history. Current trends and career opportunities will be covered. Particular attention is given to horticulture crops, plant classification, their use, and the interrelationships between the environment, plant growth and plant development.
10001112 Horticulture Soils (3 cr.)	Explores the properties of soils and applies them to horticultural uses as a growing medium and as an engineering base for landscaping.
10001113 Greenhouse and Turf Pest Management (3 cr.)	Focuses on training to successfully pass the Wisconsin Department of Agriculture, Trade and Consumer Protection's Pesticide Applicator Certification Exam (which is proctored in this class). Additionally, students will be familiarized with chemical handling, mixing, calibration and application via field exercises.
10001114 Introduction to Arboriculture (1 cr.)	Learn theory and skills in the science of arboriculture. Students will gain hands-on experience planting, pruning and maintaining trees. You'll also learn how to diagnose pests and problems as well as how to protect the trees and treat for problems. Advance techniques of aerial work and large tree removal will be studied.
10001115 Tissue Culture Propagation (2 cr.)	Teaches students how to set up a tissue culture lab and propagate plants, in vast numbers, using laboratory conditions. Class will propagate several types of plant material.
10001117 Equipment Operation, Horticulture (2 cr.)	Teaches students how to operate a variety of landscape equipment. Hands-on training will require the students to acquire an understanding of the safe operation of equipment. Focus will be on pre-operation, operation, and post-operation procedures and skills.
10001121 Hydroponic Growing & Systems (2 cr.)	Explores various hydroponic systems, their specific plant material, and growing conditions. Students will work hands-on with several units and plant materials.
10001122 Interiorscaping (2 cr.)	Studies the identification, characteristics, and physical requirements of interior plants.
10001123 Landscape Management (3 cr.)	Uses a practical approach to training people in the basics of landscape supervision and management. The course emphasizes the application of theory and covers landscape management functions and the skills needed to perform those functions.
10001125 Greenhouse Management & Control Systems (2 cr.)	Examines the day-to-day operation of a greenhouse to include operating systems, spatial management and planning crop timing.
10001130 Turf Management & Irrigation Systems (2 cr.)	Studies the overall basics of lawn (turf) applications including soils, grading, Wisconsin grasses and maintenance. Students will develop an understanding of the design, operation and maintenance of irrigation systems.

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10001131 Organic Land Care (2 cr.)	The study and installation of organic inputs for healthy landscapes. Students will brew compost tea, make compost and operate lawn care equipment. Topics explored will include alternative lawn and land care practices, practical business applications and environmental implications of current practices.
10001140 Plant Diagnostics (2 cr.)	Covers the science of making proper diagnoses of plant insects and disease problems and appropriate control strategies. Students will learn the difference between signs and symptoms and identification of problem plants.
10001145 Landscape Estimating and Technical Reports (3 cr.)	Covers landscape project cost estimating, proposal preparation, and professional written and verbal communication. Students determine landscape project material, equipment, and labor costs, and prepare project proposals, sales presentations, and a lien letter and letter of introduction.
10001158 Woody Ornamental Plant ID (3 cr.)	Explains plant classification and identification techniques. Students will utilize these techniques to properly name and identify commonly used deciduous and evergreen trees and shrubs. Culture and care will also be discussed.
10001159 Survey of Herbaceous Plants (3 cr.)	Studies commonly used annual, bulb and perennial herbaceous plants, with an emphasis on their use in the landscape, culture and care.
10001170 Fall Landscape Maintenance (3 cr.)	Studies the maintenance and care of woody plants, including evergreens, vines, garden flowers, bulbs and nursery stock. Discusses pruning, training, fertilizing, watering, planting, physical and chemical control of plant growth, transplanting, winterizing, weed control and production.
10001174 Landscape Design 1 (3 cr.)	Focuses on the landscape design process through the understanding of concepts such as outdoor room, design principles, site function and form composition. The course also includes drafting, site analysis and graphics.
10001181 Landscape Construction 1 (3 cr.)	Covers site conditions, landscape tools, and design plan implementation.
10001184 Landscape Design 2 (3 cr.)	Teaches students to design and detail landscape projects. Topics covered will include construction elements, elevations, 3D Imagery and simulated walkthroughs using CAD Landscape Design Software.
10102112 Business, Introduction to (3 cr.)	Provides an overview of the variety of activities in the world of business. It focuses on the responsibilities connected with operating a business from both organizational and managerial viewpoints. It also examines the role of government in business.

001 - Landscape Construction Technician

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10001111 Introduction to Horticulture (3 cr.)	Provides an overview of the horticulture profession, including its role and importance throughout history. Current trends and career opportunities will be covered. Particular attention is given to horticulture crops, plant classification, their use, and the interrelationships between the environment, plant growth and plant development.
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001 - Landscape Horticulture	
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10001171 Spring Landscape Maintenance (2 cr.)	Studies late winter and spring maintenance of landscape plantings including trees, shrubs, perennials and bulbs. Discussions and activities include pruning, fertilizing, planting, transplanting, winter damage assessment, spring cleanup, and pest control.
10001174 Landscape Design 1 (3 cr.)	Focuses on the landscape design process through the understanding of concepts such as outdoor room, design principles, site function and form composition. The course also includes drafting, site analysis and graphics.

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10001181 Landscape Construction 1 (3 cr.)	Covers site conditions, landscape tools, and design plan implementation.
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10809195 Economics (3 cr.)	This course is designed to give an overview of microeconomics, macroeconomics, and international economics. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues.

Course Descriptions

10809199 Psychology of Human Relations (3 cr.)

Explores the relationship between the general principles of psychology and our everyday lives. Students are given the opportunity to achieve a deepened sense of awareness of themselves and others. This understanding enables students to improve their relationships with others at work, in the family, and in society.

001 - Landscape Maintenance Technician

10001113 Greenhouse and Turf Pest Management (3 cr.)

Focuses on training to successfully pass the Wisconsin Department of Agriculture, Trade and Consumer Protection's Pesticide Applicator Certification Exam (which is proctored in this class). Additionally, students will be familiarized with chemical handling, mixing, calibration and application via field exercises.

10001117 Equipment Operation, Horticulture (2 cr.)

Teaches students how to operate a variety of landscape equipment. Hands-on training will require the students to acquire an understanding of the safe operation of equipment. Focus will be on pre-operation, operation, and post-operation procedures and skills.

10001140 Plant Diagnostics (2 cr.)

Covers the science of making proper diagnoses of plant insects and disease problems and appropriate control strategies. Students will learn the difference between signs and symptoms and identification of problem plants.

10001158 Woody Ornamental Plant ID (3 cr.)

Explains plant classification and identification techniques. Students will utilize these techniques to properly name and identify commonly used deciduous and evergreen trees and shrubs. Culture and care will also be discussed.

10001159 Survey of Herbaceous Plants (3 cr.)

Studies commonly used annual, bulb and perennial herbaceous plants, with an emphasis on their use in the landscape, culture and care.

10001170 Fall Landscape Maintenance (3 cr.)

Studies the maintenance and care of woody plants, including evergreens, vines, garden flowers, bulbs and nursery stock. Discusses pruning, training, fertilizing, watering, planting, physical and chemical control of plant growth, transplanting, winterizing, weed control and production.

006 - Agri-Business Agronomy Technician

10006102 Integrated Pest Mgmt & Weed Identification (3 cr.)

Acquaints students with the general use, safety, laws and regulations for chemical application in Wisconsin. Completion of the Wisconsin Commercial Applicators Certification is an optional portion of the course. Identification of the major weeds found in Wisconsin crop lands is emphasized.

10006103 Agricultural Marketing (3 cr.)

Explores and gives the student an understanding of the basic principles of marketing and the ability to apply these principles to the distribution of farm products.

Course Descriptions

10006116 Agribusiness Work Experience (3 cr.)	Provides independent agribusiness work experience in cooperation with an employer and FVTC. Students are evaluated by the employer and supervised during the work experience by a FVTC instructor. Department consent required.
10006119 Agricultural Crop Production (3 cr.)	Prepares students to recognize and implement basic crop production management techniques for corn, soybeans, alfalfa, small grains and general forages used on Wisconsin farms. Field preparation, fertility, seed selection, planting and in-season management of specific crops will be emphasized.
10006133 Introduction to Agribusiness (3 cr.)	Provides an overview of, and exploration into career pathways and employment opportunities, in the agricultural industry. Key issues discussed include trends and economic concepts of production, marketing and consumption of agriculture products, principles of management, and financial management.
10006140 Animal Science Fundamentals (3 cr.)	Provides fundamental knowledge of the animal science field. Topics include animal health, animal environments, anatomy and physiology, genetics and reproduction, animal feedstuffs, and job-related safety. Students will experience animal concepts through the completion of hands-on activities.
10006141 Crop Science (3 cr.)	Provides fundamental knowledge of the major crops grown in Wisconsin. Topics include crop growth and development, physiology, and nutrition; seed germination and selection; environmental factors and agronomic problems that affect crop development.
10006143 Introduction to Soils (3 cr.)	Provides fundamental knowledge of soils and growth media. Course topics include soil formation and development, soil components, soil profile, soil classification and soil conservation. Students will experience soils concepts through the completion of hands-on activities.
10006150 Agronomy Equipment (3 cr.)	Provides students with an overview of various types of agronomy-related equipment including chemical and fertilizer applicators, planters and grain drills. Equipment operation, maintenance, calibration and safety will be emphasized. Both large and small equipment will be operated during the class.
10006155 Nutrient Management Principles (3 cr.)	Focuses on balancing commercial crop nutrient products and on farm nutrient credits to formulate economical and environmentally safe crop nutrient recommendations. Students will learn how to complete a nutrient management plan utilizing real farm data.
006 - Agri-Business Dairy Technician	
10006103 Agricultural Marketing (3 cr.)	Explores and gives the student an understanding of the basic principles of marketing and the ability to apply these principles to the distribution of farm products.

Course Descriptions

10006104 Ag Production Systems (3 cr.)	Introduces the student to methods and equipment used on farms and agribusiness for facilities, dairy equipment, feed, grain, animal waste storage, and handling systems. Covers the collection, storage, treatment, application and equipment used in nutrient management. Modern robotic milking systems will be covered in the class.
10006113 Dairy/Livestock Nutrition (3 cr.)	Acquaints the students with the nutrients essential for livestock growth, production and reproduction. The anatomy and physiology of digestion and nutrient absorption will be discussed for the single stomach and ruminant animal. Proper feed sampling techniques, feed analysis and other nutritional information will be covered in preparing the student for Dairy/Livestock Ration Balancing.
10006114 Dairy/Livestock Ration Balance (3 cr.)	Teaches students the mechanics of balancing livestock rations using the National Research recommendations and other information. Computers will be used to develop rations. The makeup and functions of the nutrients essential for livestock will be discussed in the preparation of dairy and beef rations. The student will complete a cost analysis of all rations.
10006116 Agribusiness Work Experience (3 cr.)	Provides independent agribusiness work experience in cooperation with an employer and FVTC. Students are evaluated by the employer and supervised during the work experience by a FVTC instructor. Department consent required.
10006119 Agricultural Crop Production (3 cr.)	Prepares students to recognize and implement basic crop production management techniques for corn, soybeans, alfalfa, small grains and general forages used on Wisconsin farms. Field preparation, fertility, seed selection, planting and in-season management of specific crops will be emphasized.
10006133 Introduction to Agribusiness (3 cr.)	Provides an overview of, and exploration into career pathways and employment opportunities, in the agricultural industry. Key issues discussed include trends and economic concepts of production, marketing and consumption of agriculture products, principles of management, and financial management.
10006140 Animal Science Fundamentals (3 cr.)	Provides fundamental knowledge of the animal science field. Topics include animal health, animal environments, anatomy and physiology, genetics and reproduction, animal feedstuffs, and job-related safety. Students will experience animal concepts through the completion of hands-on activities.
10006145 Dairy/Livestock Herd Management (3 cr.)	Covers the herd health and reproductive systems of the dairy and livestock animals. The class will cover various herd health problems, including mastitis, milk fever and similar common livestock health problems. A herd health and reproductive management program will be developed.

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10006148 Dairy Genetics and Reproduction (3 cr.)

Designed for the student who needs a comprehensive knowledge of dairy genetics and reproduction. Emphasis is on basic genetic principles and sire selection. Students will learn the anatomy and physiology of the bovine female reproductive tract and the management of the estrous cycle in cattle.

006 - Agri-Business Management Technician

10006103 Agricultural Marketing (3 cr.)

Explores and gives the student an understanding of the basic principles of marketing and the ability to apply these principles to the distribution of farm products.

10006104 Ag Production Systems (3 cr.)

Introduces the student to methods and equipment used on farms and agribusiness for facilities, dairy equipment, feed, grain, animal waste storage, and handling systems. Covers the collection, storage, treatment, application and equipment used in nutrient management. Modern robotic milking systems will be covered in the class.

10006115 Agriculture Internship (2 cr.)

Provides students the opportunity to complete 144 hours of work experience in cooperation with an employer and FVTC. Students will give weekly work experience reports. Work Experience site visits will be completed by FVTC staff.

10006117 Agriculture Career Preparation (1 cr.)

Assists students with career planning and business skills related to obtaining employment. An independent work experience is planned with each student in cooperation with an employer and FVTC staff.

10006119 Agricultural Crop Production (3 cr.)

Prepares students to recognize and implement basic crop production management techniques for corn, soybeans, alfalfa, small grains and general forages used on Wisconsin farms. Field preparation, fertility, seed selection, planting and in-season management of specific crops will be emphasized.

10006133 Introduction to Agribusiness (3 cr.)

Provides an overview of, and exploration into career pathways and employment opportunities, in the agricultural industry. Key issues discussed include trends and economic concepts of production, marketing and consumption of agriculture products, principles of management, and financial management.

10006134 Agribusiness Sales (3 cr.)

Covers the basic principles of agribusiness sales. Topics include recognizing potential customers, building a positive customer relationship, designing sales plans, and using market and sales databases. The concepts will be presented using hands-on activities. Students will complete a sales project and presentation.

10006140 Animal Science Fundamentals (3 cr.)

Provides fundamental knowledge of the animal science field. Topics include animal health, animal environments, anatomy and physiology, genetics and reproduction, animal feedstuffs, and job-related safety. Students will experience animal concepts through the completion of hands-on activities.

Course Descriptions

10006151 Agribusiness Management (3 cr.) Focuses on developing management skills and concepts that beginning agri-business professionals need in today's changing workplace. Emphasis is given to designing and interpreting agriculture production spreadsheets, interpreting agri-business records, and preparing business and family goals. Complete business management plans will be created.

10804123 Math w Business Apps (3 cr.) This course integrates algebraic concepts, proportions, percents, simple interest, compound interest, annuities, and basic statistics with business/consumer scenarios. It also applies math concepts to the purchasing/buying and selling processes.

10809195 Economics (3 cr.) This course is designed to give an overview of microeconomics, macroeconomics, and international economics. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues.

006 - Agribusiness Science & Technology

10006103 Agricultural Marketing (3 cr.) Explores and gives the student an understanding of the basic principles of marketing and the ability to apply these principles to the distribution of farm products.

10006104 Ag Production Systems (3 cr.) Introduces the student to methods and equipment used on farms and agribusiness for facilities, dairy equipment, feed, grain, animal waste storage, and handling systems. Covers the collection, storage, treatment, application and equipment used in nutrient management. Modern robotic milking systems will be covered in the class.

10006113 Dairy/Livestock Nutrition (3 cr.) Acquaints the students with the nutrients essential for livestock growth, production and reproduction. The anatomy and physiology of digestion and nutrient absorption will be discussed for the single stomach and ruminant animal. Proper feed sampling techniques, feed analysis and other nutritional information will be covered in preparing the student for Dairy/Livestock Ration Balancing.

10006114 Dairy/Livestock Ration Balance (3 cr.) Teaches students the mechanics of balancing livestock rations using the National Research recommendations and other information. Computers will be used to develop rations. The makeup and functions of the nutrients essential for livestock will be discussed in the preparation of dairy and beef rations. The student will complete a cost analysis of all rations.

10006115 Agriculture Internship (2 cr.) Provides students the opportunity to complete 144 hours of work experience in cooperation with an employer and FVTC. Students will give weekly work experience reports. Work Experience site visits will be completed by FVTC staff.

Course Descriptions

10006117 Agriculture Career Preparation (1 cr.)	Assists students with career planning and business skills related to obtaining employment. An independent work experience is planned with each student in cooperation with an employer and FVTC staff.
10006119 Agricultural Crop Production (3 cr.)	Prepares students to recognize and implement basic crop production management techniques for corn, soybeans, alfalfa, small grains and general forages used on Wisconsin farms. Field preparation, fertility, seed selection, planting and in-season management of specific crops will be emphasized.
10006133 Introduction to Agribusiness (3 cr.)	Provides an overview of, and exploration into career pathways and employment opportunities, in the agricultural industry. Key issues discussed include trends and economic concepts of production, marketing and consumption of agriculture products, principles of management, and financial management.
10006134 Agribusiness Sales (3 cr.)	Covers the basic principles of agribusiness sales. Topics include recognizing potential customers, building a positive customer relationship, designing sales plans, and using market and sales databases. The concepts will be presented using hands-on activities. Students will complete a sales project and presentation.
10006140 Animal Science Fundamentals (3 cr.)	Provides fundamental knowledge of the animal science field. Topics include animal health, animal environments, anatomy and physiology, genetics and reproduction, animal feedstuffs, and job-related safety. Students will experience animal concepts through the completion of hands-on activities.
10006141 Crop Science (3 cr.)	Provides fundamental knowledge of the major crops grown in Wisconsin. Topics include crop growth and development, physiology, and nutrition; seed germination and selection; environmental factors and agronomic problems that affect crop development.
10006143 Introduction to Soils (3 cr.)	Provides fundamental knowledge of soils and growth media. Course topics include soil formation and development, soil components, soil profile, soil classification and soil conservation. Students will experience soils concepts through the completion of hands-on activities.
10006145 Dairy/Livestock Herd Management (3 cr.)	Covers the herd health and reproductive systems of the dairy and livestock animals. The class will cover various herd health problems, including mastitis, milk fever and similar common livestock health problems. A herd health and reproductive management program will be developed.
10006151 Agribusiness Management (3 cr.)	Focuses on developing management skills and concepts that beginning agri-business professionals need in today's changing workplace. Emphasis is given to designing and interpreting agriculture production spreadsheets, interpreting agri-business records, and preparing business and family goals. Complete business management plans will be created.

Course Descriptions

10006155 Nutrient Management Principles (3 cr.)	Focuses on balancing commercial crop nutrient products and on farm nutrient credits to formulate economical and environmentally safe crop nutrient recommendations. Students will learn how to complete a nutrient management plan utilizing real farm data.
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
10804123 Math w Business Apps (3 cr.)	This course integrates algebraic concepts, proportions, percents, simple interest, compound interest, annuities, and basic statistics with business/consumer scenarios. It also applies math concepts to the purchasing/buying and selling processes.
10809195 Economics (3 cr.)	This course is designed to give an overview of microeconomics, macroeconomics, and international economics. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues.
10809199 Psychology of Human Relations (3 cr.)	Explores the relationship between the general principles of psychology and our everyday lives. Students are given the opportunity to achieve a deepened sense of awareness of themselves and others. This understanding enables students to improve their relationships with others at work, in the family, and in society.

006 - Agribusiness Science & Technology - Agronomy

10006102 Integrated Pest Mgmt & Weed Identification (3 cr.)	Acquaints students with the general use, safety, laws and regulations for chemical application in Wisconsin. Completion of the Wisconsin Commercial Applicators Certification is an optional portion of the course. Identification of the major weeds found in Wisconsin crop lands is emphasized.
10006103 Agricultural Marketing (3 cr.)	Explores and gives the student an understanding of the basic principles of marketing and the ability to apply these principles to the distribution of farm products.
10006109 Crop Scouting Training (3 cr.)	Includes hands-on identification and management of insects, diseases and seedling weeds found in Wisconsin crops. Crop development and herbicide damage issues will also be covered.

Course Descriptions

10006116 Agribusiness Work Experience (3 cr.)	Provides independent agribusiness work experience in cooperation with an employer and FVTC. Students are evaluated by the employer and supervised during the work experience by a FVTC instructor. Department consent required.
10006119 Agricultural Crop Production (3 cr.)	Prepares students to recognize and implement basic crop production management techniques for corn, soybeans, alfalfa, small grains and general forages used on Wisconsin farms. Field preparation, fertility, seed selection, planting and in-season management of specific crops will be emphasized.
10006133 Introduction to Agribusiness (3 cr.)	Provides an overview of, and exploration into career pathways and employment opportunities, in the agricultural industry. Key issues discussed include trends and economic concepts of production, marketing and consumption of agriculture products, principles of management, and financial management.
10006134 Agribusiness Sales (3 cr.)	Covers the basic principles of agribusiness sales. Topics include recognizing potential customers, building a positive customer relationship, designing sales plans, and using market and sales databases. The concepts will be presented using hands-on activities. Students will complete a sales project and presentation.
10006140 Animal Science Fundamentals (3 cr.)	Provides fundamental knowledge of the animal science field. Topics include animal health, animal environments, anatomy and physiology, genetics and reproduction, animal feedstuffs, and job-related safety. Students will experience animal concepts through the completion of hands-on activities.
10006141 Crop Science (3 cr.)	Provides fundamental knowledge of the major crops grown in Wisconsin. Topics include crop growth and development, physiology, and nutrition; seed germination and selection; environmental factors and agronomic problems that affect crop development.
10006143 Introduction to Soils (3 cr.)	Provides fundamental knowledge of soils and growth media. Course topics include soil formation and development, soil components, soil profile, soil classification and soil conservation. Students will experience soils concepts through the completion of hands-on activities.
10006146 Commercial Vegetable Production (3 cr.)	Explore planting technology, variety selection, soil fertility, cultural practices, harvest of commercial vegetables, and pest management including disease, insects, and weeds. Common Wisconsin vegetables discussed will include potato, snap beans, canning peas, sweet corn, and smaller volume vegetable crops.

Course Descriptions

- 10006150 Agronomy Equipment (3 cr.)** Provides students with an overview of various types of agronomy-related equipment including chemical and fertilizer applicators, planters and grain drills. Equipment operation, maintenance, calibration and safety will be emphasized. Both large and small equipment will be operated during the class.
- 10006154 Precision Ag Overview (3 cr.)** Provides an overview of precision farming concepts and the tools of precision farming (GPS, GIS and VRT). Covers the introductory use of each of these tools in the processes of a precision farming system. Hands-on activities with real farm data will provide an initial experience in the use of these tools. Economic and environmental benefits will also be discussed.
- 10006155 Nutrient Management Principles (3 cr.)** Focuses on balancing commercial crop nutrient products and on farm nutrient credits to formulate economical and environmentally safe crop nutrient recommendations. Students will learn how to complete a nutrient management plan utilizing real farm data.
- 10006163 GIS Applications (3 cr.)** Prepares students in the use of various Geographic Information Systems utilized in precision farming. Students will learn how to install and set up GIS software, transfer data, process field data, and create reports and/or prescription maps. Students will utilize hands-on computer exercises with real farm data to provide a practical experience.
- 10801195 Written Communication (3 cr.)** Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
- 10801196 Oral/Interpersonal Comm (3 cr.)** Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
- 10804123 Math w Business Apps (3 cr.)** This course integrates algebraic concepts, proportions, percents, simple interest, compound interest, annuities, and basic statistics with business/consumer scenarios. It also applies math concepts to the purchasing/buying and selling processes.
- 10809195 Economics (3 cr.)** This course is designed to give an overview of microeconomics, macroeconomics, and international economics. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues.

Course Descriptions

10809199 Psychology of Human Relations (3 cr.)

Explores the relationship between the general principles of psychology and our everyday lives. Students are given the opportunity to achieve a deepened sense of awareness of themselves and others. This understanding enables students to improve their relationships with others at work, in the family, and in society.

006 - Agribusiness Science & Technology - Animal Science

10006103 Agricultural Marketing (3 cr.)

Explores and gives the student an understanding of the basic principles of marketing and the ability to apply these principles to the distribution of farm products.

10006104 Ag Production Systems (3 cr.)

Introduces the student to methods and equipment used on farms and agribusiness for facilities, dairy equipment, feed, grain, animal waste storage, and handling systems. Covers the collection, storage, treatment, application and equipment used in nutrient management. Modern robotic milking systems will be covered in the class.

10006113 Dairy/Livestock Nutrition (3 cr.)

Acquaints the students with the nutrients essential for livestock growth, production and reproduction. The anatomy and physiology of digestion and nutrient absorption will be discussed for the single stomach and ruminant animal. Proper feed sampling techniques, feed analysis and other nutritional information will be covered in preparing the student for Dairy/Livestock Ration Balancing.

10006114 Dairy/Livestock Ration Balance (3 cr.)

Teaches students the mechanics of balancing livestock rations using the National Research recommendations and other information. Computers will be used to develop rations. The makeup and functions of the nutrients essential for livestock will be discussed in the preparation of dairy and beef rations. The student will complete a cost analysis of all rations.

10006116 Agribusiness Work Experience (3 cr.)

Provides independent agribusiness work experience in cooperation with an employer and FVTC. Students are evaluated by the employer and supervised during the work experience by a FVTC instructor. Department consent required.

10006119 Agricultural Crop Production (3 cr.)

Prepares students to recognize and implement basic crop production management techniques for corn, soybeans, alfalfa, small grains and general forages used on Wisconsin farms. Field preparation, fertility, seed selection, planting and in-season management of specific crops will be emphasized.

10006133 Introduction to Agribusiness (3 cr.)

Provides an overview of, and exploration into career pathways and employment opportunities, in the agricultural industry. Key issues discussed include trends and economic concepts of production, marketing and consumption of agriculture products, principles of management, and financial management.

Course Descriptions

10006140 Animal Science Fundamentals (3 cr.)	Provides fundamental knowledge of the animal science field. Topics include animal health, animal environments, anatomy and physiology, genetics and reproduction, animal feedstuffs, and job-related safety. Students will experience animal concepts through the completion of hands-on activities.
10006145 Dairy/Livestock Herd Management (3 cr.)	Covers the herd health and reproductive systems of the dairy and livestock animals. The class will cover various herd health problems, including mastitis, milk fever and similar common livestock health problems. A herd health and reproductive management program will be developed.
10006148 Dairy Genetics and Reproduction (3 cr.)	Designed for the student who needs a comprehensive knowledge of dairy genetics and reproduction. Emphasis is on basic genetic principles and sire selection. Students will learn the anatomy and physiology of the bovine female reproductive tract and the management of the estrous cycle in cattle.
10006149 Dairy/Livestock Records Management (3 cr.)	Acquaints the students with herd management programs using traditional and computerized herd record keeping systems. Students will have hands-on experience with the latest available programs used in dairy record keeping.
10006151 Agribusiness Management (3 cr.)	Focuses on developing management skills and concepts that beginning agri-business professionals need in today's changing workplace. Emphasis is given to designing and interpreting agriculture production spreadsheets, interpreting agri-business records, and preparing business and family goals. Complete business management plans will be created.
10006155 Nutrient Management Principles (3 cr.)	Focuses on balancing commercial crop nutrient products and on farm nutrient credits to formulate economical and environmentally safe crop nutrient recommendations. Students will learn how to complete a nutrient management plan utilizing real farm data.
10006169 Dairy/Livestock Artificial Insemination Records & Management (3 cr.)	Teaches students about the anatomy and physiology of cattle reproduction and artificial insemination of the bovine species. Topics include estrous cycle and reproductive records management, nutrition, animal fertility, herd health and sire selection. Site visits will be used to practice estrous detection, insemination techniques and computer analysis. Hands-on computer training with Dairy Comp 305 and PCDART will focus on development of herd protocols and their analysis.
10006170 Animal Health (3 cr.)	Examines animal health by studying disease etiology, symptoms, transmission, diagnosis, prevention and control. Learners will focus on a variety of species while using proper veterinary terminology as it relates to disease. Additionally, learners will develop a comprehensive preventative medicine plan for a species of interest.

Course Descriptions

10801195 Written Communication (3 cr.) Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.

10801196 Oral/Interpersonal Comm (3 cr.) Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.

10804123 Math w Business Apps (3 cr.) This course integrates algebraic concepts, proportions, percents, simple interest, compound interest, annuities, and basic statistics with business/consumer scenarios. It also applies math concepts to the purchasing/buying and selling processes.

10809195 Economics (3 cr.) This course is designed to give an overview of microeconomics, macroeconomics, and international economics. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues.

10809199 Psychology of Human Relations (3 cr.) Explores the relationship between the general principles of psychology and our everyday lives. Students are given the opportunity to achieve a deepened sense of awareness of themselves and others. This understanding enables students to improve their relationships with others at work, in the family, and in society.

006 - Agricultural Accounting

10006133 Introduction to Agribusiness (3 cr.) Provides an overview of, and exploration into career pathways and employment opportunities, in the agricultural industry. Key issues discussed include trends and economic concepts of production, marketing and consumption of agriculture products, principles of management, and financial management.

10006151 Agribusiness Management (3 cr.) Focuses on developing management skills and concepts that beginning agri-business professionals need in today's changing workplace. Emphasis is given to designing and interpreting agriculture production spreadsheets, interpreting agri-business records, and preparing business and family goals. Complete business management plans will be created.

Course Descriptions

10101104 QuickBooks Accounting Online (2 cr.)

Lays the foundation for students to gain experience using QuickBooks Pro. Students practice creating a company using a chart of accounts, creating vendors and customers, demo payroll, record transactions, and generate and use financial reports. Being familiar with Windows, business experience or completion of an accounting course is helpful. Upon completion of this course, students are eligible to take the QuickBooks Certification exam.

10101145 Spreadsheets, Beginning (1 cr.)

Covers developing, constructing and printing basic business-related worksheets and reports using spreadsheet software. Students create, modify and print various charts based on worksheet data.

10101180 Financial Accounting 1 (4 cr.)

Prepares students to analyze, record, summarize and interpret accounting information. The course focuses on business transactions, financial statements, merchandising, inventory, special journals, internal controls, receivables, plant assets and payroll.

006 - Agricultural Entrepreneurship

10006133 Introduction to Agribusiness (3 cr.)

Provides an overview of, and exploration into career pathways and employment opportunities, in the agricultural industry. Key issues discussed include trends and economic concepts of production, marketing and consumption of agriculture products, principles of management, and financial management.

10006151 Agribusiness Management (3 cr.)

Focuses on developing management skills and concepts that beginning agri-business professionals™ need in today's changing workplace. Emphasis is given to designing and interpreting agriculture production spreadsheets, interpreting agri-business records, and preparing business and family goals. Complete business management plans will be created.

10145115 Entrepreneurial Thinking (3 cr.)

Engages participants in fundamental aspects of an entrepreneurial mindset as an essential life skill. Course draws upon concepts of entrepreneurial thought/process, and features real-world unlikely entrepreneurs who overcame challenges by embracing an entrepreneurial mindset. Experiential learning is obtained through identifying problems, finding solutions, and making connections beyond the classroom.

006 - Crop Application Specialist

10006102 Integrated Pest Mgmt & Weed Identification (3 cr.)

Acquaints students with the general use, safety, laws and regulations for chemical application in Wisconsin. Completion of the Wisconsin Commercial Applicators Certification is an optional portion of the course. Identification of the major weeds found in Wisconsin crop lands is emphasized.

Course Descriptions

10006109 Crop Scouting Training (3 cr.)	Includes hands-on identification and management of insects, diseases and seedling weeds found in Wisconsin crops. Crop development and herbicide damage issues will also be covered.
10006116 Agribusiness Work Experience (3 cr.)	Provides independent agribusiness work experience in cooperation with an employer and FVTC. Students are evaluated by the employer and supervised during the work experience by a FVTC instructor. Department consent required.
10006119 Agricultural Crop Production (3 cr.)	Prepares students to recognize and implement basic crop production management techniques for corn, soybeans, alfalfa, small grains and general forages used on Wisconsin farms. Field preparation, fertility, seed selection, planting and in-season management of specific crops will be emphasized.
10006141 Crop Science (3 cr.)	Provides fundamental knowledge of the major crops grown in Wisconsin. Topics include crop growth and development, physiology, and nutrition; seed germination and selection; environmental factors and agronomic problems that affect crop development.
10006143 Introduction to Soils (3 cr.)	Provides fundamental knowledge of soils and growth media. Course topics include soil formation and development, soil components, soil profile, soil classification and soil conservation. Students will experience soils concepts through the completion of hands-on activities.
10006150 Agronomy Equipment (3 cr.)	Provides students with an overview of various types of agronomy-related equipment including chemical and fertilizer applicators, planters and grain drills. Equipment operation, maintenance, calibration and safety will be emphasized. Both large and small equipment will be operated during the class.
10006154 Precision Ag Overview (3 cr.)	Provides an overview of precision farming concepts and the tools of precision farming (GPS, GIS and VRT). Covers the introductory use of each of these tools in the processes of a precision farming system. Hands-on activities with real farm data will provide an initial experience in the use of these tools. Economic and environmental benefits will also be discussed.
10006159 Precision Agriculture Advanced (3 cr.)	Explores future trends in the precision agriculture field. This course will expose students to new and emerging trends as they become available to the agriculture and precision farming industry. Students will learn how the technology works through hands-on activities and will also learn how to adapt the technology to current practices. Students will learn about unmanned aerial vehicles and FAA rules and regulations.

006 - Precision Agriculture Technician

10006109 Crop Scouting Training (3 cr.)	Includes hands-on identification and management of insects, diseases and seedling weeds found in Wisconsin crops. Crop development and herbicide damage issues will also be covered.
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Course Descriptions

10006115 Agriculture Internship (2 cr.)	Provides students the opportunity to complete 144 hours of work experience in cooperation with an employer and FVTC. Students will give weekly work experience reports. Work Experience site visits will be completed by FVTC staff.
10006117 Agriculture Career Preparation (1 cr.)	Assists students with career planning and business skills related to obtaining employment. An independent work experience is planned with each student in cooperation with an employer and FVTC staff.
10006119 Agricultural Crop Production (3 cr.)	Prepares students to recognize and implement basic crop production management techniques for corn, soybeans, alfalfa, small grains and general forages used on Wisconsin farms. Field preparation, fertility, seed selection, planting and in-season management of specific crops will be emphasized.
10006134 Agribusiness Sales (3 cr.)	Covers the basic principles of agribusiness sales. Topics include recognizing potential customers, building a positive customer relationship, designing sales plans, and using market and sales databases. The concepts will be presented using hands-on activities. Students will complete a sales project and presentation.
10006141 Crop Science (3 cr.)	Provides fundamental knowledge of the major crops grown in Wisconsin. Topics include crop growth and development, physiology, and nutrition; seed germination and selection; environmental factors and agronomic problems that affect crop development.
10006146 Commercial Vegetable Production (3 cr.)	Explore planting technology, variety selection, soil fertility, cultural practices, harvest of commercial vegetables, and pest management including disease, insects, and weeds. Common Wisconsin vegetables discussed will include potato, snap beans, canning peas, sweet corn, and smaller volume vegetable crops.
10006150 Agronomy Equipment (3 cr.)	Provides students with an overview of various types of agronomy-related equipment including chemical and fertilizer applicators, planters and grain drills. Equipment operation, maintenance, calibration and safety will be emphasized. Both large and small equipment will be operated during the class.
10006154 Precision Ag Overview (3 cr.)	Provides an overview of precision farming concepts and the tools of precision farming (GPS, GIS and VRT). Covers the introductory use of each of these tools in the processes of a precision farming system. Hands-on activities with real farm data will provide an initial experience in the use of these tools. Economic and environmental benefits will also be discussed.

Course Descriptions

10006159 Precision Agriculture Advanced (3 cr.)

Explores future trends in the precision agriculture field. This course will expose students to new and emerging trends as they become available to the agriculture and precision farming industry. Students will learn how the technology works through hands-on activities and will also learn how to adapt the technology to current practices. Students will learn about unmanned aerial vehicles and FAA rules and regulations.

10006163 GIS Applications (3 cr.)

Prepares students in the use of various Geographic Information Systems utilized in precision farming. Students will learn how to install and set up GIS software, transfer data, process field data, and create reports and/or prescription maps. Students will utilize hands-on computer exercises with real farm data to provide a practical experience.

057 - Conservation Agronomist

10006102 Integrated Pest Mgmt & Weed Identification (3 cr.)

Acquaints students with the general use, safety, laws and regulations for chemical application in Wisconsin. Completion of the Wisconsin Commercial Applicators Certification is an optional portion of the course. Identification of the major weeds found in Wisconsin crop lands is emphasized.

10006119 Agricultural Crop Production (3 cr.)

Prepares students to recognize and implement basic crop production management techniques for corn, soybeans, alfalfa, small grains and general forages used on Wisconsin farms. Field preparation, fertility, seed selection, planting and in-season management of specific crops will be emphasized.

10006155 Nutrient Management Principles (3 cr.)

Focuses on balancing commercial crop nutrient products and on farm nutrient credits to formulate economical and environmentally safe crop nutrient recommendations. Students will learn how to complete a nutrient management plan utilizing real farm data.

10057134 Soil and Water Conservation (3 cr.)

Examines the physical, chemical and biological properties of soil in relation to water and wind erosion. The identification, planning and use of soil and water conservation practices are examined, and students study the relationship of soil fertility to conservation and management.

10057135 Soil and Water Conservation/Engineering (3 cr.)

Explores in greater detail soil and water conservation practices including planning, design, quantities, cost lists and field layout. Auto level, theodolite and laser level will be used throughout class. Field locations will help familiarize students with the standards and specifications used in the design of structural and vegetable erosion control practices. Proper construction and maintenance of these practices are stressed.

Course Descriptions

10057136 Environmental Water Quality (3 cr.) Examines the physical, chemical and biological characteristics of surface and groundwater. Water quality standards and regulations are discussed. Surveys of the various forms and sources of water pollutants are conducted, and water quality assessments, using biological indicators and chemical tests, are covered. The course includes a brief overview of the treatment process.

10057140 Plant Identification (1 cr.) Provides a basic study of the trees, grasses, herbs and aquatics of Wisconsin. The class focuses on the principal species of seven major plant communities: forest, bog, agriculture, prairie, marsh, shrub and beach.

057 - Forest Management Specialist

10057132 Forestry 1 (3 cr.) Covers tree and shrub identification (dendrology), forest mapping, stand inventory, basic forest ecology, silvicultural practices and timber types. This course prepares students to perform more specific job-related tasks in Forestry 2.

10057133 Forestry 2 (3 cr.) A continuation of Forestry 1 with studies of aerial photography applications, logging operations, lumber scaling and grading, fire weather and fire suppression, tree planting and seeding operations, forest diseases and insects of the lake states. It culminates with field trips to natural resource agencies to view the practices and principles learned during class.

10057134 Soil and Water Conservation (3 cr.) Examines the physical, chemical and biological properties of soil in relation to water and wind erosion. The identification, planning and use of soil and water conservation practices are examined, and students study the relationship of soil fertility to conservation and management.

10057140 Plant Identification (1 cr.) Provides a basic study of the trees, grasses, herbs and aquatics of Wisconsin. The class focuses on the principal species of seven major plant communities: forest, bog, agriculture, prairie, marsh, shrub and beach.

10058160 Wildfire Intro S130/S190/L180 (2 cr.) Prepares new firefighters in basic firefighting skills and behavior factors that will aid them in the safe and effective control of wildland fires.

10058162 S212 Wildland Fire Chainsaws (1 cr.) Provides introduction to the function, maintenance and use of internal combustion engine-powered chainsaws and their tactical wildland fire application.

10058181 Prescribed Fire (1 cr.) Consists of student participation in prescribed fire application for management and fuel reduction objectives. Emphasis will be on safety, ignition patterns and holding crews.

10058182 Fire Prep (1 cr.) Prepares the student for fire season. Topics include writing burn plans, burn site checks, equipment inventory, organization and maintenance.

057 - Habitat and Land Use Management Specialist

Course Descriptions

10057128 Wildlife Mgmt - Nongame and Hunted Species (3 cr.)	Introduces wildlife ecology and management. The course focuses on habitat restoration and maintenance, deer management, wildlife damage control, ecological concepts and population dynamics.
10057134 Soil and Water Conservation (3 cr.)	Examines the physical, chemical and biological properties of soil in relation to water and wind erosion. The identification, planning and use of soil and water conservation practices are examined, and students study the relationship of soil fertility to conservation and management.
10057135 Soil and Water Conservation/Engineering (3 cr.)	Explores in greater detail soil and water conservation practices including planning, design, quantities, cost lists and field layout. Auto level, theodolite and laser level will be used throughout class. Field locations will help familiarize students with the standards and specifications used in the design of structural and vegetable erosion control practices. Proper construction and maintenance of these practices are stressed.
10057140 Plant Identification (1 cr.)	Provides a basic study of the trees, grasses, herbs and aquatics of Wisconsin. The class focuses on the principal species of seven major plant communities: forest, bog, agriculture, prairie, marsh, shrub and beach.
10058160 Wildfire Intro S130/S190/L180 (2 cr.)	Prepares new firefighters in basic firefighting skills and behavior factors that will aid them in the safe and effective control of wildland fires.
10058162 S212 Wildland Fire Chainsaws (1 cr.)	Provides introduction to the function, maintenance and use of internal combustion engine-powered chainsaws and their tactical wildland fire application.
10058181 Prescribed Fire (1 cr.)	Consists of student participation in prescribed fire application for management and fuel reduction objectives. Emphasis will be on safety, ignition patterns and holding crews.
10058182 Fire Prep (1 cr.)	Prepares the student for fire season. Topics include writing burn plans, burn site checks, equipment inventory, organization and maintenance.

057 - Natural Resources Technician

10057106 Surveying 1 (3 cr.)	Introduces the use of an auto level, laser level and theodolite. Emphasis is on the fundamental concepts and principles of basic topographic surveying and mapping. Several computer programs are used to generate maps.
10057107 Surveying 2 (3 cr.)	Acquaints the student to the open and closed traverse and the general methods utilized with the total station and data collector for field data collection. Computer software programs are used to help aid the student in map production.
10057109 Ecology (2 cr.)	Examines the relationships and interrelationships of living organisms in their environment. Students study natural selection and speciation, environmental conditions, populations and competition, succession, energy flow and biogeochemical cycles, and the diversity of ecosystems.

Course Descriptions

10057128 Wildlife Mgmt - Nongame and Hunted Species (3 cr.)	Introduces wildlife ecology and management. The course focuses on habitat restoration and maintenance, deer management, wildlife damage control, ecological concepts and population dynamics.
10057129 Fish Mgmt- Ichthyology, Limnology/Field Pract (3 cr.)	Students will learn about fish identification and classification, and lakes and streams as a life environment. Field techniques and practices used in studying and managing fish will be presented. Several hands-on field experiences are conducted.
10057130 Recreation Facilities Maintenance (3 cr.)	Introduces general maintenance activities applied at recreation facilities through a combination of lecture, lab and fieldtrips. Planning and maintenance of various recreation trail types and facilities along with the operation and maintenance of chainsaws, brush saws and lawn care equipment.
10057132 Forestry 1 (3 cr.)	Covers tree and shrub identification (dendrology), forest mapping, stand inventory, basic forest ecology, silvicultural practices and timber types. This course prepares students to perform more specific job-related tasks in Forestry 2.
10057133 Forestry 2 (3 cr.)	A continuation of Forestry 1 with studies of aerial photography applications, logging operations, lumber scaling and grading, fire weather and fire suppression, tree planting and seeding operations, forest diseases and insects of the lake states. It culminates with field trips to natural resource agencies to view the practices and principles learned during class.
10057134 Soil and Water Conservation (3 cr.)	Examines the physical, chemical and biological properties of soil in relation to water and wind erosion. The identification, planning and use of soil and water conservation practices are examined, and students study the relationship of soil fertility to conservation and management.
10057136 Environmental Water Quality (3 cr.)	Examines the physical, chemical and biological characteristics of surface and groundwater. Water quality standards and regulations are discussed. Surveys of the various forms and sources of water pollutants are conducted, and water quality assessments, using biological indicators and chemical tests, are covered. The course includes a brief overview of the treatment process.
10057137 Wastewater Management (3 cr.)	Studies in waste treatment systems in detail, including the collection, handling and disposal of wastewaters and sludges. Laboratory work emphasizes the tests and methods used to evaluate the performance of treatment units.
10057140 Plant Identification (1 cr.)	Provides a basic study of the trees, grasses, herbs and aquatics of Wisconsin. The class focuses on the principal species of seven major plant communities: forest, bog, agriculture, prairie, marsh, shrub and beach.

Course Descriptions

10057142 Natural Resources Co-op Experience (2 cr.)	Enables the student to volunteer 80 hours of service to one or more natural resource agencies for approved job training. The student's progress is monitored by the instructor through direct communication with the participating agency. This course is taken in the fall semester of a student's final academic year.
10057143 Natural Resources Common Topics (2 cr.)	Introduces U.S. public land surveys, topographic maps, orienteering principles and mapping. Other topics include the polar planimeter, dot grid, abney levels and clinometers, basic aerial photo uses, and chainsaw use and maintenance.
10057183 Exploring Natural Resources (3 cr.)	Provides basic study of natural resources, focusing on their abundance, importance, and conservation. The physical biological variables of the environment will be studied in field and classroom settings. Career development will be incorporated to expose students to job-related activities for the following core areas: wildlife and fisheries, forestry, surveying, outdoor recreation, soils, and water quality and wastewater management.
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.

Course Descriptions

- 10804107 College Mathematics (3 cr.)** This course is designed to review and develop fundamental concepts of mathematics in the areas of algebra, geometry, trigonometry, measurement and data. Algebra topics emphasize simplifying algebraic expressions, solving linear equations and inequalities with one variable, solving proportions and percent applications. Geometry and trigonometry topics include; finding areas and volumes of geometric figures, applying similar and congruent triangles, applying Pythagorean Theorem, and solving right triangles using trigonometric ratios. Measurement topics emphasize the application of measurement concepts and conversion techniques within and between U.S. customary and metric system to solve problems. Data topics emphasize data organization and summarization skills, including: frequency distributions, central tendency, relative position and measures of dispersion. Special emphasis is placed on problem solving, critical thinking and logical reasoning, making connections, and using calculators.
- 10806114 General Biology (4 cr.)** Introduces general biological concepts and principles. Emphasis is on cell structure and function, genetics, evolution, and taxonomical relationships. Consideration is also given to diversity among the various kingdoms.
- 10806134 General Chemistry (4 cr.)** Covers the fundamentals of chemistry. Topics include scientific method, problem-solving using quantitative, characteristics of matter, periodic relationships of elements, chemical bonding, chemical reactions, chemical equilibrium, analysis of chemical substances, characteristics of aqueous solutions, acids, bases, and gas laws.
- 10809195 Economics (3 cr.)** This course is designed to give an overview of microeconomics, macroeconomics, and international economics. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues.
- 10809198 Intro to Psychology (3 cr.)** This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.
- 058 - Wildland Fire Wildland Fire Crew**
- 10057109 Ecology (2 cr.)** Examines the relationships and interrelationships of living organisms in their environment. Students study natural selection and speciation, environmental conditions, populations and competition, succession, energy flow and biogeochemical cycles, and the diversity of ecosystems.

Course Descriptions

10057140 Plant Identification (1 cr.)	Provides a basic study of the trees, grasses, herbs and aquatics of Wisconsin. The class focuses on the principal species of seven major plant communities: forest, bog, agriculture, prairie, marsh, shrub and beach.
10057143 Natural Resources Common Topics (2 cr.)	Introduces U.S. public land surveys, topographic maps, orienteering principles and mapping. Other topics include the polar planimeter, dot grid, abney levels and clinometers, basic aerial photo uses, and chainsaw use and maintenance.
10057183 Exploring Natural Resources (3 cr.)	Provides basic study of natural resources, focusing on their abundance, importance, and conservation. The physical biological variables of the environment will be studied in field and classroom settings. Career development will be incorporated to expose students to job-related activities for the following core areas: wildlife and fisheries, forestry, surveying, outdoor recreation, soils, and water quality and wastewater management.
10058160 Wildfire Intro S130/S190/L180 (2 cr.)	Prepares new firefighters in basic firefighting skills and behavior factors that will aid them in the safe and effective control of wildland fires.
10058162 S212 Wildland Fire Chainsaws (1 cr.)	Provides introduction to the function, maintenance and use of internal combustion engine-powered chainsaws and their tactical wildland fire application.
10058164 S-219 Firing Operations (1 cr.)	Planning, execution, safety, coordination and evaluation of an ignition operation on a wildland or prescribed fire.
10058173 Fitness Qualification Prep 1 (1 cr.)	Introduces the student to the requirements for the 1.5 mile run, 3 mile pack test and step test which are required by wildland fire hiring agencies.
10058179 Fire Experience (3 cr.)	Allows students to gain valuable fire experience for the resume. While not guaranteed, students may be paid for some forest fire suppression duty.
10058182 Fire Prep (1 cr.)	Prepares the student for fire season. Topics include writing burn plans, burn site checks, equipment inventory, organization and maintenance.
10058186 S211/S131 Pumps/FF1 (2 cr.)	Combines two NWCG classes. S-131 is Firefighter Type 1 training. Sometimes called Squad Boss, these are the entry-level supervisors in wildland firefighting. Topics include operational leadership, communications, LCES, and tactical decision making. S-211 consists of three skill areas including supply, delivery and application of water.
10058188 Wildfire Equipment Operation (2 cr.)	Operation of heavy equipment of hand tools used in wildland fire.
10503103 Hazmat Awareness & Operations (2 cr.)	Identify the classification hazardous materials, determine the nature and extent of the problem, and protect first responders, nearby persons, and the environment from the effects of the release.

Course Descriptions

10531105 Emergency Medical Responder with Healthcare Provider CPR (2 cr.)

Teaches and evaluates the knowledge/skills needed to respond to medical or trauma situations. It includes AED, Combitube, EpiPen, Spinal Immobilization, CPR and skills needed to assist the ambulance crew. This course meets Wisconsin and National licensure guidelines. Students receive an AHA Healthcare CPR card and FVTC Emergency Medical Responder certificate.

10801195 Written Communication (3 cr.)

Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.

10804107 College Mathematics (3 cr.)

This course is designed to review and develop fundamental concepts of mathematics in the areas of algebra, geometry, trigonometry, measurement and data. Algebra topics emphasize simplifying algebraic expressions, solving linear equations and inequalities with one variable, solving proportions and percent applications. Geometry and trigonometry topics include; finding areas and volumes of geometric figures, applying similar and congruent triangles, applying Pythagorean Theorem, and solving right triangles using trigonometric ratios. Measurement topics emphasize the application of measurement concepts and conversion techniques within and between U.S. customary and metric system to solve problems. Data topics emphasize data organization and summarization skills, including: frequency distributions, central tendency, relative position and measures of dispersion. Special emphasis is placed on problem solving, critical thinking and logical reasoning, making connections, and using calculators.

058 - Wildland Fire Wildland Firefighter

10057109 Ecology (2 cr.)

Examines the relationships and interrelationships of living organisms in their environment. Students study natural selection and speciation, environmental conditions, populations and competition, succession, energy flow and biogeochemical cycles, and the diversity of ecosystems.

10057128 Wildlife Mgmt - Nongame and Hunted Species (3 cr.)

Introduces wildlife ecology and management. The course focuses on habitat restoration and maintenance, deer management, wildlife damage control, ecological concepts and population dynamics.

Course Descriptions

10057131 Forest Recreation Environmental Education (3 cr.)	Emphasis will be creating and presenting environmental education activities to various audiences. The design and delivery of environmental curriculum is the focus and will be augmented with additional public presentations and volunteering at area environmental centers. Individual and group laboratory projects and presentations are required.
10057132 Forestry 1 (3 cr.)	Covers tree and shrub identification (dendrology), forest mapping, stand inventory, basic forest ecology, silvicultural practices and timber types. This course prepares students to perform more specific job-related tasks in Forestry 2.
10057133 Forestry 2 (3 cr.)	A continuation of Forestry 1 with studies of aerial photography applications, logging operations, lumber scaling and grading, fire weather and fire suppression, tree planting and seeding operations, forest diseases and insects of the lake states. It culminates with field trips to natural resource agencies to view the practices and principles learned during class.
10057140 Plant Identification (1 cr.)	Provides a basic study of the trees, grasses, herbs and aquatics of Wisconsin. The class focuses on the principal species of seven major plant communities: forest, bog, agriculture, prairie, marsh, shrub and beach.
10057143 Natural Resources Common Topics (2 cr.)	Introduces U.S. public land surveys, topographic maps, orienteering principles and mapping. Other topics include the polar planimeter, dot grid, abney levels and clinometers, basic aerial photo uses, and chainsaw use and maintenance.
10057183 Exploring Natural Resources (3 cr.)	Provides basic study of natural resources, focusing on their abundance, importance, and conservation. The physical biological variables of the environment will be studied in field and classroom settings. Career development will be incorporated to expose students to job-related activities for the following core areas: wildlife and fisheries, forestry, surveying, outdoor recreation, soils, and water quality and wastewater management.
10058160 Wildfire Intro S130/S190/L180 (2 cr.)	Prepares new firefighters in basic firefighting skills and behavior factors that will aid them in the safe and effective control of wildland fires.
10058162 S212 Wildland Fire Chainsaws (1 cr.)	Provides introduction to the function, maintenance and use of internal combustion engine-powered chainsaws and their tactical wildland fire application.
10058163 S290 Intermediate Wildland Fire Behavior (1 cr.)	Designed to prepare the prospective supervisor to undertake safe and effective fire management operations.
10058164 S-219 Firing Operations (1 cr.)	Planning, execution, safety, coordination and evaluation of an ignition operation on a wildland or prescribed fire.
10058171 History of Wildfire (3 cr.)	Examines the role of wildland fire and firefighting throughout history to the present.
10058173 Fitness Qualification Prep 1 (1 cr.)	Introduces the student to the requirements for the 1.5 mile run, 3 mile pack test and step test which are required by wildland fire hiring agencies.

Course Descriptions

10058179 Fire Experience (3 cr.)	Allows students to gain valuable fire experience for the resume. While not guaranteed, students may be paid for some forest fire suppression duty.
10058181 Prescribed Fire (1 cr.)	Consists of student participation in prescribed fire application for management and fuel reduction objectives. Emphasis will be on safety, ignition patterns and holding crews.
10058182 Fire Prep (1 cr.)	Prepares the student for fire season. Topics include writing burn plans, burn site checks, equipment inventory, organization and maintenance.
10058185 S134 & RT130 Annual Refresher (1 cr.)	Compiles two NWCG classes. S-134 is a safety course focusing on personal firefighter safety. RT-130 is the annual fire line safety refresher training required for all firefighters. Topics differ by year based on industry recommendations and identified training needs. Includes annual shelter deployment practice for all participants.
10058186 S211/S131 Pumps/FF1 (2 cr.)	Combines two NWCG classes. S-131 is Firefighter Type 1 training. Sometimes called Squad Boss, these are the entry-level supervisors in wildland firefighting. Topics include operational leadership, communications, LCES, and tactical decision making. S-211 consists of three skill areas including supply, delivery and application of water.
10058188 Wildfire Equipment Operation (2 cr.)	Operation of heavy equipment of hand tools used in wildland fire.
10503103 Hazmat Awareness & Operations (2 cr.)	Identify the classification hazardous materials, determine the nature and extent of the problem, and protect first responders, nearby persons, and the environment from the effects of the release.
10531105 Emergency Medical Responder with Healthcare Provider CPR (2 cr.)	Teaches and evaluates the knowledge/skills needed to respond to medical or trauma situations. It includes AED, Combitube, EpiPen, Spinal Immobilization, CPR and skills needed to assist the ambulance crew. This course meets Wisconsin and National licensure guidelines. Students receive an AHA Healthcare CPR card and FVTC Emergency Medical Responder certificate.
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.

Course Descriptions

10804107 College Mathematics (3 cr.) This course is designed to review and develop fundamental concepts of mathematics in the areas of algebra, geometry, trigonometry, measurement and data. Algebra topics emphasize simplifying algebraic expressions, solving linear equations and inequalities with one variable, solving proportions and percent applications. Geometry and trigonometry topics include; finding areas and volumes of geometric figures, applying similar and congruent triangles, applying Pythagorean Theorem, and solving right triangles using trigonometric ratios. Measurement topics emphasize the application of measurement concepts and conversion techniques within and between U.S. customary and metric system to solve problems. Data topics emphasize data organization and summarization skills, including: frequency distributions, central tendency, relative position and measures of dispersion. Special emphasis is placed on problem solving, critical thinking and logical reasoning, making connections, and using calculators.

10806114 General Biology (4 cr.) Introduces general biological concepts and principles. Emphasis is on cell structure and function, genetics, evolution, and taxonomical relationships. Consideration is also given to diversity among the various kingdoms.

10809195 Economics (3 cr.) This course is designed to give an overview of microeconomics, macroeconomics, and international economics. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues.

10809198 Intro to Psychology (3 cr.) This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.

070 - Agriculture Agricultural Equipment Technology

10070102 Ag Equipment Dealership Principles (3 cr.) Focuses on the role of the Equipment Dealer in today's agriculture economy. An in depth look at both sides of the customer and business relationship exploring the needs of the agribusiness customer, how the equipment dealer works to meet those needs and the roles of Sales, Parts and Service at the Equipment Dealership.

10070103 Intro to Service Maintenance & Principles (3 cr.) Introduces students to service department functions, service related programs, and principles. Exposure to compact equipment with attachments. Students will learn assembly, pre-delivery, preventative maintenance inspection, along with basic maintenance techniques.

Course Descriptions

10070104 Safety Principles/Shop Tools (2 cr.)	Focuses on equipment shop safety, correct tool usage and types of fasteners. Students will perform some basic duties in the shop using different types of tools and fasteners. Students will learn the different tools. They will also learn and perform some basic welding and cutting torch applications.
10070110 Agriculture Hydraulic Systems (2 cr.)	Introduces the student to the fundamentals of fluid power, components, different hydraulic systems, hydraulic schematics and terminology of the hydraulic systems used on modern agriculture mobile equipment. Includes operation of fluid flow on various systems, maintenance and system diagnostics. Students are exposed to the special tools used to test hydraulic systems. The use of these special tools and technical manuals are stressed.
10070115 Agriculture Air Conditioning (1 cr.)	Provides theory of operation, service and testing of air conditioning units used to cool operator's cab of modern equipment. Students will have lab work consisting of leak detection, evacuation, charging of systems, R-12 to R134A conversions, electrical circuits and diagnostics of systems. Students will have the opportunity to apply for the Wisconsin State Air Conditioning Certification.
10070118 Ag Diesel Engine Systems (3 cr.)	Introduces the basic knowledge of a diesel combustible engine. Students will learn the skills and knowledge needed to diagnose, maintain and adjust diesel engines found in agricultural machines and equipment. Use of technical manuals and precision measuring equipment is stressed.
10070120 Ag Planting Equipment (3 cr.)	Provides a comprehensive study of planting equipment. There will be extensive coverage of planting and seeding equipment. Units to be covered will include no-till drills, corn planters and seed metering units. Students will work with the seed metering test stand to rebuild and calibrate the seed meters.
10070121 Ag Grain Harvesting (3 cr.)	Provides theory of operation, adjustments and service repair of grain and forage harvesting equipment. Lab work includes hands-on service of combine and forage harvesting equipment. Machines covered include combines, self-propelled and pull-type forage harvesters, round, small and large square balers.
10070123 Agriculture Power Transmission (4 cr.)	Provides theory and power flow of various transmissions used on agriculture power driven equipment. Includes collarshift, synchronized and powershift transmissions. Also covers differentials, final drives, PTO clutches and tractor clutches. Proper use of spatiality tools and technical manuals is stressed.

Course Descriptions

10070126 Skid Loader/Compact Equipment (3 cr.)	Provides the knowledge and skills needed to operate, diagnose and repair skid loaders and telehandler equipment. Involves areas of training of both in electrical, hydraulics, drive transmissions, operational adjustments and operation. It is recommended to have successfully completed Electrical and Ag Hydraulics.
10070130 Agriculture Forage Harvesting Equipment (3 cr.)	Focuses on forage harvesting equipment. Students will perform necessary adjustments and repairs associated with the forage harvesting equipment
10070131 Ag DC Electrical Systems (3 cr.)	Focuses on DC electron flow theory, different types of circuits and troubleshooting the circuits. Students will also use schematics to diagnosis problems. Starting and charging systems will be covered.
10070132 Advanced Agriculture Hydraulic Systems (3 cr.)	Provides students the opportunity to work with various types of hydraulic systems used on agriculture equipment. They will do testing, diagnostic and repair of these systems. Students will need to complete Agriculture Hydraulic Systems before enrolling in this class.
10070136 AG DC Electronic Systems (3 cr.)	Focuses on electrical and electronic circuits used on DC electrical systems in agricultural equipment. Students will develop the knowledge and skills associated with diagnosing and troubleshooting these circuits. Students will learn the functions of the electronic systems. Computer use will be stressed.
10070137 Precision Equipment Systems (3 cr.)	Introduces the student to the different precision farming GPS systems used on agriculture equipment. Students will learn proper set-up and installation of the systems. Students will work in the field with adjustments and settings as well as the GPS display and the different functions.
10070139 Agriculture Student Development (1 cr.)	Finalizes what the student has learned, which will show how well the student has obtained some of the knowledge and skills needed before entering into their career. This will be a capstone course for the student. Students will be assessed in the program outcome areas.
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.

Course Descriptions

10804123 Math w Business Apps (3 cr.) This course integrates algebraic concepts, proportions, percents, simple interest, compound interest, annuities, and basic statistics with business/consumer scenarios. It also applies math concepts to the purchasing/buying and selling processes.

10809172 Introduction to Diversity Studies (3 cr.) This course introduces the study of diversity from a local to a global perspective using a holistic, interdisciplinary approach that encourages exploration and prepares students to work in a diverse environment. The course introduces basic diversity concepts, examines the impact of bias and power differentials among groups, explores the use of culturally responsive communication strategies, and compares forces that shape diversity in an international context.

10809199 Psychology of Human Relations (3 cr.) Explores the relationship between the general principles of psychology and our everyday lives. Students are given the opportunity to achieve a deepened sense of awareness of themselves and others. This understanding enables students to improve their relationships with others at work, in the family, and in society.

070 - Agriculture Equipment Apprenticeship

10070103 Intro to Service Maintenance & Principles (3 cr.) Introduces students to service department functions, service related programs, and principles. Exposure to compact equipment with attachments. Students will learn assembly, pre-delivery, preventative maintenance inspection, along with basic maintenance techniques.

10070104 Safety Principles/Shop Tools (2 cr.) Focuses on equipment shop safety, correct tool usage and types of fasteners. Students will perform some basic duties in the shop using different types of tools and fasteners. Students will learn the different tools. They will also learn and perform some basic welding and cutting torch applications.

10070110 Agriculture Hydraulic Systems (2 cr.) Introduces the student to the fundamentals of fluid power, components, different hydraulic systems, hydraulic schematics and terminology of the hydraulic systems used on modern agriculture mobile equipment. Includes operation of fluid flow on various systems, maintenance and system diagnostics. Students are exposed to the special tools used to test hydraulic systems. The use of these special tools and technical manuals are stressed.

10070115 Agriculture Air Conditioning (1 cr.) Provides theory of operation, service and testing of air conditioning units used to cool operator's cab of modern equipment. Students will have lab work consisting of leak detection, evacuation, charging of systems, R-12 to R134A conversions, electrical circuits and diagnostics of systems. Students will have the opportunity to apply for the Wisconsin State Air Conditioning Certification.

Course Descriptions

10070118 Ag Diesel Engine Systems (3 cr.)	Introduces the basic knowledge of a diesel combustible engine. Students will learn the skills and knowledge needed to diagnose, maintain and adjust diesel engines found in agricultural machines and equipment. Use of technical manuals and precision measuring equipment is stressed.
10070120 Ag Planting Equipment (3 cr.)	Provides a comprehensive study of planting equipment. There will be extensive coverage of planting and seeding equipment. Units to be covered will include no-till drills, corn planters and seed metering units. Students will work with the seed metering test stand to rebuild and calibrate the seed meters.
10070121 Ag Grain Harvesting (3 cr.)	Provides theory of operation, adjustments and service repair of grain and forage harvesting equipment. Lab work includes hands-on service of combine and forage harvesting equipment. Machines covered include combines, self-propelled and pull-type forage harvesters, round, small and large square balers.
10070123 Agriculture Power Transmission (4 cr.)	Provides theory and power flow of various transmissions used on agriculture power driven equipment. Includes collarshift, synchronized and powershift transmissions. Also covers differentials, final drives, PTO clutches and tractor clutches. Proper use of spatiality tools and technical manuals is stressed.
10070126 Skid Loader/Compact Equipment (3 cr.)	Provides the knowledge and skills needed to operate, diagnose and repair skid loaders and telehandler equipment. Involves areas of training of both in electrical, hydraulics, drive transmissions, operational adjustments and operation. It is recommended to have successfully completed Electrical and Ag Hydraulics.
10070130 Agriculture Forage Harvesting Equipment (3 cr.)	Focuses on forage harvesting equipment. Students will perform necessary adjustments and repairs associated with the forage harvesting equipment
10070131 Ag DC Electrical Systems (3 cr.)	Focuses on DC electron flow theory, different types of circuits and troubleshooting the circuits. Students will also use schematics to diagnosis problems. Starting and charging systems will be covered.
10070132 Advanced Agriculture Hydraulic Systems (3 cr.)	Provides students the opportunity to work with various types of hydraulic systems used on agriculture equipment. They will do testing, diagnostic and repair of these systems. Students will need to complete Agriculture Hydraulic Systems before enrolling in this class.
10070136 AG DC Electronic Systems (3 cr.)	Focuses on electrical and electronic circuits used on DC electrical systems in agricultural equipment. Students will develop the knowledge and skills associated with diagnosing and troubleshooting these circuits. Students will learn the functions of the electronic systems. Computer use will be stressed.

Course Descriptions

10070137 Precision Equipment Systems (3 cr.)

Introduces the student to the different precision farming GPS systems used on agriculture equipment. Students will learn proper set-up and installation of the systems. Students will work in the field with adjustments and settings as well as the GPS display and the different functions.

10070139 Agriculture Student Development (1 cr.)

Finalizes what the student has learned, which will show how well the student has obtained some of the knowledge and skills needed before entering into their career. This will be a capstone course for the student. Students will be assessed in the program outcome areas.

10801195 Written Communication (3 cr.)

Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.

070 - Agriculture Equipment Service Technician

10070103 Intro to Service Maintenance & Principles (3 cr.)

Introduces students to service department functions, service related programs, and principles. Exposure to compact equipment with attachments. Students will learn assembly, pre-delivery, preventative maintenance inspection, along with basic maintenance techniques.

10070104 Safety Principles/Shop Tools (2 cr.)

Focuses on equipment shop safety, correct tool usage and types of fasteners. Students will perform some basic duties in the shop using different types of tools and fasteners. Students will learn the different tools. They will also learn and perform some basic welding and cutting torch applications.

10070110 Agriculture Hydraulic Systems (2 cr.)

Introduces the student to the fundamentals of fluid power, components, different hydraulic systems, hydraulic schematics and terminology of the hydraulic systems used on modern agriculture mobile equipment. Includes operation of fluid flow on various systems, maintenance and system diagnostics. Students are exposed to the special tools used to test hydraulic systems. The use of these special tools and technical manuals are stressed.

10070115 Agriculture Air Conditioning (1 cr.)

Provides theory of operation, service and testing of air conditioning units used to cool operator's cab of modern equipment. Students will have lab work consisting of leak detection, evacuation, charging of systems, R-12 to R134A conversions, electrical circuits and diagnostics of systems. Students will have the opportunity to apply for the Wisconsin State Air Conditioning Certification.

Course Descriptions

10070118 Ag Diesel Engine Systems (3 cr.)	Introduces the basic knowledge of a diesel combustible engine. Students will learn the skills and knowledge needed to diagnose, maintain and adjust diesel engines found in agricultural machines and equipment. Use of technical manuals and precision measuring equipment is stressed.
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Course Descriptions

10070137 Precision Equipment Systems (3 cr.)

Introduces the student to the different precision farming GPS systems used on agriculture equipment. Students will learn proper set-up and installation of the systems. Students will work in the field with adjustments and settings as well as the GPS display and the different functions.

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Finalizes what the student has learned, which will show how well the student has obtained some of the knowledge and skills needed before entering into their career. This will be a capstone course for the student. Students will be assessed in the program outcome areas.

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Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.

070 - Agriculture Power Equipment

10070102 Ag Equipment Dealership Principles (3 cr.)

Focuses on the role of the Equipment Dealer in today's agriculture economy. An in depth look at both sides of the customer and business relationship exploring the needs of the agribusiness customer, how the equipment dealer works to meet those needs and the roles of Sales, Parts and Service at the Equipment Dealership.

10070103 Intro to Service Maintenance & Principles (3 cr.)

Introduces students to service department functions, service related programs, and principles. Exposure to compact equipment with attachments. Students will learn assembly, pre-delivery, preventative maintenance inspection, along with basic maintenance techniques.

10070104 Safety Principles/Shop Tools (2 cr.)

Focuses on equipment shop safety, correct tool usage and types of fasteners. Students will perform some basic duties in the shop using different types of tools and fasteners. Students will learn the different tools. They will also learn and perform some basic welding and cutting torch applications.

10070110 Agriculture Hydraulic Systems (2 cr.)

Introduces the student to the fundamentals of fluid power, components, different hydraulic systems, hydraulic schematics and terminology of the hydraulic systems used on modern agriculture mobile equipment. Includes operation of fluid flow on various systems, maintenance and system diagnostics. Students are exposed to the special tools used to test hydraulic systems. The use of these special tools and technical manuals are stressed.

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10070118 Ag Diesel Engine Systems (3 cr.)	Introduces the basic knowledge of a diesel combustible engine. Students will learn the skills and knowledge needed to diagnose, maintain and adjust diesel engines found in agricultural machines and equipment. Use of technical manuals and precision measuring equipment is stressed.
10070120 Ag Planting Equipment (3 cr.)	Provides a comprehensive study of planting equipment. There will be extensive coverage of planting and seeding equipment. Units to be covered will include no-till drills, corn planters and seed metering units. Students will work with the seed metering test stand to rebuild and calibrate the seed meters.
10070121 Ag Grain Harvesting (3 cr.)	Provides theory of operation, adjustments and service repair of grain and forage harvesting equipment. Lab work includes hands-on service of combine and forage harvesting equipment. Machines covered include combines, self-propelled and pull-type forage harvesters, round, small and large square balers.
10070123 Agriculture Power Transmission (4 cr.)	Provides theory and power flow of various transmissions used on agriculture power driven equipment. Includes collarshift, synchronized and powershift transmissions. Also covers differentials, final drives, PTO clutches and tractor clutches. Proper use of spatiality tools and technical manuals is stressed.
10070126 Skid Loader/Compact Equipment (3 cr.)	Provides the knowledge and skills needed to operate, diagnose and repair skid loaders and telehandler equipment. Involves areas of training of both in electrical, hydraulics, drive transmissions, operational adjustments and operation. It is recommended to have successfully completed Electrical and Ag Hydraulics.
10070130 Agriculture Forage Harvesting Equipment (3 cr.)	Focuses on forage harvesting equipment. Students will perform necessary adjustments and repairs associated with the forage harvesting equipment
10070131 Ag DC Electrical Systems (3 cr.)	Focuses on DC electron flow theory, different types of circuits and troubleshooting the circuits. Students will also use schematics to diagnosis problems. Starting and charging systems will be covered.

Course Descriptions

10070132 Advanced Agriculture Hydraulic Systems (3 cr.)	Provides students the opportunity to work with various types of hydraulic systems used on agriculture equipment. They will do testing, diagnostic and repair of these systems. Students will need to complete Agriculture Hydraulic Systems before enrolling in this class.
10070136 AG DC Electronic Systems (3 cr.)	Focuses on electrical and electronic circuits used on DC electrical systems in agricultural equipment. Students will develop the knowledge and skills associated with diagnosing and troubleshooting these circuits. Students will learn the functions of the electronic systems. Computer use will be stressed.
10070137 Precision Equipment Systems (3 cr.)	Introduces the student to the different precision farming GPS systems used on agriculture equipment. Students will learn proper set-up and installation of the systems. Students will work in the field with adjustments and settings as well as the GPS display and the different functions.
10070139 Agriculture Student Development (1 cr.)	Finalizes what the student has learned, which will show how well the student has obtained some of the knowledge and skills needed before entering into their career. This will be a capstone course for the student. Students will be assessed in the program outcome areas.
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
10804123 Math w Business Apps (3 cr.)	This course integrates algebraic concepts, proportions, percents, simple interest, compound interest, annuities, and basic statistics with business/consumer scenarios. It also applies math concepts to the purchasing/buying and selling processes.
10809172 Introduction to Diversity Studies (3 cr.)	This course introduces the study of diversity from a local to a global perspective using a holistic, interdisciplinary approach that encourages exploration and prepares students to work in a diverse environment. The course introduces basic diversity concepts, examines the impact of bias and power differentials among groups, explores the use of culturally responsive communication strategies, and compares forces that shape diversity in an international context.

Course Descriptions

10809199 Psychology of Human Relations (3 cr.)

Explores the relationship between the general principles of psychology and our everyday lives. Students are given the opportunity to achieve a deepened sense of awareness of themselves and others. This understanding enables students to improve their relationships with others at work, in the family, and in society.

080 - Production Farm Operation

10006116 Agribusiness Work Experience (3 cr.)

Provides independent agribusiness work experience in cooperation with an employer and FVTC. Students are evaluated by the employer and supervised during the work experience by a FVTC instructor. Department consent required.

10006169 Dairy/Livestock Artificial Insemination Records & Management (3 cr.)

Teaches students about the anatomy and physiology of cattle reproduction and artificial insemination of the bovine species. Topics include estrous cycle and reproductive records management, nutrition, animal fertility, herd health and sire selection. Site visits will be used to practice estrous detection, insemination techniques and computer analysis. Hands-on computer training with Dairy Comp 305 and PCDART will focus on development of herd protocols and their analysis.

10080104 Farm Business Management (2 cr.)

Covers practical use of computer based farm record system(s) for farm business management and financial analysis. Topics include farm business goals, financial statements, selection and use of farm credit, farm business arrangements, estate planning, and farm income taxes.

10080105 Feeding Modern Livestock Operations (2 cr.)

Acquaints the student with the nutrients essential for livestock production and reproduction. Anatomy and physiology of digestion and absorption are discussed for single stomach and ruminant animals. Basic principles of feeding modern livestock will be discussed. Introduces the student to the mechanics of balancing livestock rations.

10080106 Precision Agriculture (2 cr.)

Provides students with an introduction to common Precision Agriculture technologies used in crop production today. Topics include: satellite technology, hardware, data collection, variable rate control of seed, automatic section control, yield monitors, and new technologies in agriculture. The challenges and benefits of adopting Precision Agriculture technologies on the farm will also be discussed.

10080107 Tractor Preventive Maintenance (2 cr.)

Provides students with the knowledge and skills needed to do some general maintenance on diesel engines and electrical systems. Students will learn basic engine and electrical fundamentals.

10080108 Crop Management Principles (2 cr.)

Covers the basic principles and management techniques for corn, soybeans, alfalfa, and small grains grown on Wisconsin farms. Includes information on field preparation, pest management, seed selection, and in season management of specific crops.

Course Descriptions

10080109 Principles of Reproduction (2 cr.)	Designed for the student who needs a comprehensive knowledge of dairy genetics and reproduction. Emphasis is on basic genetic principles and sire selection. Students will learn the anatomy and physiology of the bovine female and male reproductive tract and the management of the estrous cycle in cattle.
10080110 Harvesting Equipment (2 cr.)	Provides students with the knowledge and skills to perform maintenance and adjustments associated with grain and forage harvesting equipment. Students will learn the principles of operation for both forage and grain harvesting equipment.
10080111 Herd Health and Management (2 cr.)	Covers the herd health and reproductive systems of dairy and livestock animals from birth to maturity. The class will cover various herd health problems, including mastitis, milk fever and similar common livestock health problems. A herd health and reproductive management program will be developed which covers the herd population from calves to mature cows.
10080112 Soil Principles and Fertility (2 cr.)	Acquaints the student with the physical, chemical and biological properties of soil in relation to fertility, soil health and good soil management. The students will collect soil samples and identify fertility needs from soil test reports. Nutrient management planning will be taught.
10080113 Farm and Dairy Records (2 cr.)	Focuses on management skills and concepts that beginning producers need. Emphasis is given in establishing and recording farm business records, business and family goals. Entire farming operation is assessed and plans are developed for farm management decisions. Dairy Comp 305 and PCDART will be covered to teach herd management skills.
10080114 Agricultural Planting Systems (2 cr.)	Provides students with an understanding of operation and maintenance of planting systems. Topics will include parts identification, planter function, calibrations, planter monitors, and general maintenance.
10080115 Agricultural Commodity Marketing (2 cr.)	Explores crop, livestock, and dairy markets. Student develop an understanding of the basic principles of commodity marketing and the ability to apply these principles to the distribution of farm products. Commodity marketing strategies will be taught in order to reduce financial risk of farms.

082 - Agriculture Dairy Automation

10006145 Dairy/Livestock Herd Management (3 cr.)	Covers the herd health and reproductive systems of the dairy and livestock animals. The class will cover various herd health problems, including mastitis, milk fever and similar common livestock health problems. A herd health and reproductive management program will be developed.
10006149 Dairy/Livestock Records Management (3 cr.)	Acquaints the students with herd management programs using traditional and computerized herd record keeping systems. Students will have hands-on experience with the latest available programs used in dairy record keeping.

Course Descriptions

10141155 Spanish Language and Culture for Dairy (3 cr.)	Introduces the basics of the Spanish language for dairy operations. Develop the language skills and cultural understanding to communicate confidently with Spanish speakers on the farm. Learn the basics of pronunciation, conversation, and common dairy terminology related to daily tasks, and protocols.
10620111 Pneumatics 1 (1 cr.)	Provides an introduction to fundamental principles and laws of fluid power, with a focus on pneumatics. Laboratory activities are performed to verify the theory.
10620112 Pneumatics 2 (1 cr.)	Introduces advanced pneumatic and electropneumatic systems. Students examine how pneumatic components operate and how they interact in industrial systems. Laboratory activities are performed to verify the theory.
10620164 Elements of Machines 1 (1 cr.)	Emphasizes the mechanical elements of industrial machines. Principles of leveling motors, fasteners, bearings, and couplings are covered. Terminology, selection, and proper installation and maintenance are stressed.
10620165 Elements of Machines 2 (1 cr.)	Emphasizes the mechanical elements of industrial machines. Principles of power transmission, belt drives, and chain drives are covered. Terminology, selection, and proper installation and maintenance are stressed.
10620188 System Troubleshooting (1 cr.)	Develops troubleshooting skills by using several closed-loop systems on a level and flow process trainer. Students identify faults electrically inserted into this trainer by recognizing symptoms, creating and using flow charts for analysis, and finding the problem with test instruments.
10628101 Concepts of Programming for Technicians (1 cr.)	Introduces students to programming fundamentals necessary in automation related careers. Students will discuss proper programming structures including flow chart and pseudocode programming. Students will create and troubleshoot programs.
10628113 Electronic Construction Applications (1 cr.)	Introduces industrial control panel design, layout, mounting, and wiring of industrial relays, push buttons, pilot lights, plc, fuses, transformers, 3 phase motor, and motor starters are applied. Quality installation and NEC standards are emphasized throughout the course.
10628151 PLC 1 (1 cr.)	Introduces Programmable Logic Controllers (PLC)s and RSLogix 500 Programming Software. The PLC hardware will consist of Allen Bradley products. Students use the RSLogix 500 programming software to create logical solutions for real world applications. The applications will require students to create, download, and debug programs in RSLogix 500.

Course Descriptions

10628152 PLC 2 (1 cr.)	Introduces Programmable Logic Controllers (PLC)s and Studio 5000 (formerly RSLogix5000) Programming Software. The PLC hardware will consist of Allen Bradley products. Students will configure Ethernet communications to connect to the Allen Bradley PLC hardware. Students will use Studio 5000 programming software to create logical solutions for real world applications. The applications will require students to create, download, and debug their programs. Students will study industrial sensors and their uses. Students will wire and test sensor operations.
10660110 DC Circuits 1 (1 cr.)	Introduces electrical safety and program procedures. The course covers Ohm's Law, power law, series circuits, and voltmeter, ammeter and ohmmeter applications. Number powers, electronic notations, circuit component recognition and diagrams, resistor power ratings, color code, Kirchhoff's voltage law and atomic structure are also included.
10660111 DC Circuits 2 (1 cr.)	Covers basic parallel and series-parallel circuits and their properties. Examines the theory, application and design of series-parallel circuits, such as loaded and unloaded voltage dividers and the Wheatstone bridge. Laboratory activities are performed to verify the theory.
10660112 DC Circuits 3 (1 cr.)	Covers capacitors and inductors including time constants and instantaneous voltage and current values of RC and RL circuits. Applications and various types of capacitors and inductors are discussed. Magnetism, electromagnetism, and devices, such as relays and solenoids, are also presented. Laboratory activities are performed to verify the theory.
10660114 AC Circuits 1 (1 cr.)	Covers AC waveforms and different voltage values including Peak, RMS, Average and Peak to Peak. The operation of transformers is also included. Laboratory activities using the oscilloscope are performed to verify the theory.
10660170 Ladder Logic & Control Devices (1 cr.)	Introduces hardwired components found in industrial applications used to control simple circuits. Students will learn about switches, relays, contactors, timers, and indicator lamps. Students will use their knowledge of these devices to wire various circuits. Students will use ladder logic diagrams to interconnect and label devices to make complete circuits.
10660184 Computer Systems & Networks 1 (1 cr.)	Focuses on computer terms, computer hardware, computer functions, security and operating systems. Basic networking concepts are also introduced.
10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.

Course Descriptions

10804113 College Technical Math 1A (3 cr.) Topics include: solving linear equations; graphing; percent; proportions; measurement systems; computational geometry; and right triangle trigonometry. Emphasis will be on the application of skills to technical problems. Successful completion of College Technical Mathematics 1A and College Technical Mathematics 1B is the equivalent of College Technical Mathematics 1.

090 - Farm Business Farm Business & Production Management

30090350 Livestock/Farmstead Equipment Management-Part 1 (1 cr.) Includes various phases of selection, breeding, herd health, and the raising and marketing of livestock, and livestock products. Students will learn the selection of milking, feed, ventilation, manure handling, equipment, and farm buildings. Using a business analysis, they will understand how the livestock and farmstead program is related to the total farm enterprise. Classes are held during the semester and include classroom and on-farm instruction.

30090351 Livestock/Farmstead Equipment Management-Part 2 (1 cr.) Includes various phases of selection, breeding, herd health, and the raising and marketing of livestock, and livestock products. Students will learn the operation of milking, feed, ventilation, manure handling, equipment, and farm buildings. Using a business analysis, they will understand how the livestock and farmstead program is related to the total farm enterprise. Classes are held during the semester and include classroom and on-farm instruction.

30090352 Livestock/Farmstead Equipment Management-Part 3 (1 cr.) Includes various phases of selection, breeding, herd health, and the raising and marketing of livestock, and livestock products. Students will learn the maintenance of milking, feed, ventilation, manure handling, equipment, and farm buildings. Using a business analysis, they will understand how the livestock and farmstead program is related to the total farm enterprise. Classes are held during the semester and include classroom and on-farm instruction.

30090353 Soil Management-Part 1 (1 cr.) Students will conduct soil testing procedures. Information will be utilized for an analysis of the farm business and planning of cropping strategies. Classes are held during the semester and include classroom and on-farm instruction.

30090354 Soil Management-Part 2 (1 cr.) Students will conduct soil testing procedures and interpret reports. Information will be utilized for an analysis of the farm business and planning of cropping strategies. Classes are held during the semester and include classroom and on-farm instruction.

30090355 Soil Management-Part 3 (1 cr.) Students will conduct soil testing procedures, interpret reports, and implement a land use plan. Information will be utilized for an analysis of the farm business and planning of cropping strategies. Classes are held during the semester and include classroom and on-farm instruction.

Course Descriptions

30090356 Livestock Nutrition-Part 1 (1 cr.)	Focuses on the skills, techniques, and concepts necessary for sound feeding management. Topics include determining feed values, economics of feed, nutritional terminology and requirements, feed consumption of livestock, understanding feed tag labels for protein, energy, minerals, and vitamins, and metabolic diseases of lactating livestock. Students will be introduced to base feed and feeding programs. Classes are held during the semester and include classroom and on-farm instruction.
30090357 Livestock Nutrition-Part 2 (1 cr.)	Focuses on the skills, techniques, and concepts necessary for sound feeding management. Topics include determining feed values, economics of feed, nutritional terminology and requirements, feed consumption of livestock, understanding feed tag labels for protein, energy, minerals and vitamins, and metabolic diseases of lactating livestock. Students will apply base feed and feeding programs. Classes are held during the semester and include classroom and on-farm instruction.
30090358 Livestock Nutrition-Part 3 (1 cr.)	Focuses on the skills, techniques, and concepts necessary for sound feeding management. Topics include determining feed values, economics of feed, nutritional terminology and requirements, feed consumption of livestock, understanding feed tag labels for protein, energy, minerals and vitamins, and metabolic diseases of lactating livestock. Students will evaluate base feed and feeding programs. Classes are held during the semester and include classroom and on-farm instruction.
30090359 Crop Management-Part 1 (1 cr.)	The farm cropping program is an integral part of the total farm business management plan. Students will be introduced to farm crop production, management, and economic practices. Specific topics will relate to variety, selection, planning, pest control, harvesting, storage, safety, and marketing. Classes are held during the semester and include classroom and on-farm instruction.
30090360 Crop Management-Part 2 (1 cr.)	The farm cropping program is an integral part of the total farm business management plan. Students will interpret crop production, management, and economic practices. Specific topics will relate to variety, selection, planning, pest control, harvesting, storage, safety, and marketing. Classes are held during the semester and include classroom and on-farm instruction.
30090361 Crop Management-Part 3 (1 cr.)	The farm cropping program is an integral part of the total farm business management plan. Students will evaluate crop production, management, and economic practices. Specific topics will relate to variety, selection, planning, pest control, harvesting, storage, safety, and marketing. Classes are held during the semester and include classroom and on-farm instruction.

Course Descriptions

30090392 Farm Records and Business Analysis-Part 1 (1 cr.)	Covers the practical use of a farm record system in managing the farm and financial analysis. Topics include the establishment of farm business goals, use of farm credit, farm business arrangements, farm estate planning, and farm income taxes. Use of computers and/or computer records and financial analysis of farm business and finance strategy to meet the student's needs. Production and financial decisions will be based on students' farm business analysis. Classes are held during the semester and include classroom and on-farm instruction.
30090393 Farm Records and Business Analysis-Part 2 (1 cr.)	Covers the practical use of a farm record system in managing the farm and financial analysis. Topics include the selection of farm business goals, use of farm credit, farm business arrangements, farm estate planning, and farm income taxes. Use of computers and/or computer records and financial analysis of farm business and finance strategy to meet the student's needs. Production and financial decisions will be based on students' farm business analysis. Classes are held during the semester and include classroom and on-farm instruction.
30090394 Farm Records and Business Analysis-Part 3 (1 cr.)	Covers the practical use of a farm record system in managing the farm and financial analysis. Topics include the analysis of farm business goals, use of farm credit, farm business arrangements, farm estate planning, and farm income taxes. Use of computers and/or computer records and financial analysis of farm business and finance strategy to meet the student's needs. Production and financial decisions will be based on students' farm business analysis. Classes are held during the semester and include classroom and on-farm instruction.
30090395 Operating a Farm Business-Part 1 (1 cr.)	Focuses on management skills and concepts that students need to continue farming in today's changing technology. Emphasis is given in establishing and recording farm business records and family goals. Students will organize farm business records to make sound farm management decisions. Entire farming operation is assessed and plans are developed for future needs and goals. Classes are held during the semester and include classroom and on-farm instruction.
30090396 Operating a Farm Business-Part 2 (1 cr.)	Focuses on management skills and concepts that students need to continue farming in today's changing technology. Emphasis is given in establishing and recording farm business records and family goals. Students will organize and maintain farm business records to make sound farm management decisions. Entire farming operation is assessed and plans are developed for future needs and goals. Classes are held during the semester and include classroom and on-farm instruction.

Course Descriptions

30090397 Operating a Farm Business- Part 3 (1 cr.) Focuses on management skills and concepts that students need to continue farming in today's changing technology. Emphasis is given in establishing and recording farm business records and family goals. Students will organize, maintain, and analyze farm business records to make sound farm management decisions. Entire farming operation is assessed and plans are developed for future needs and goals. Classes are held during the semester and include classroom and on-farm instruction.

091 - Animal Animal Science

10006103 Agricultural Marketing (3 cr.) Explores and gives the student an understanding of the basic principles of marketing and the ability to apply these principles to the distribution of farm products.

10006104 Ag Production Systems (3 cr.) Introduces the student to methods and equipment used on farms and agribusiness for facilities, dairy equipment, feed, grain, animal waste storage, and handling systems. Covers the collection, storage, treatment, application and equipment used in nutrient management. Modern robotic milking systems will be covered in the class.

10006113 Dairy/Livestock Nutrition (3 cr.) Acquaints the students with the nutrients essential for livestock growth, production and reproduction. The anatomy and physiology of digestion and nutrient absorption will be discussed for the single stomach and ruminant animal. Proper feed sampling techniques, feed analysis and other nutritional information will be covered in preparing the student for Dairy/Livestock Ration Balancing.

10006114 Dairy/Livestock Ration Balance (3 cr.) Teaches students the mechanics of balancing livestock rations using the National Research recommendations and other information. Computers will be used to develop rations. The makeup and functions of the nutrients essential for livestock will be discussed in the preparation of dairy and beef rations. The student will complete a cost analysis of all rations.

10006116 Agribusiness Work Experience (3 cr.) Provides independent agribusiness work experience in cooperation with an employer and FVTC. Students are evaluated by the employer and supervised during the work experience by a FVTC instructor. Department consent required.

10006119 Agricultural Crop Production (3 cr.) Prepares students to recognize and implement basic crop production management techniques for corn, soybeans, alfalfa, small grains and general forages used on Wisconsin farms. Field preparation, fertility, seed selection, planting and in-season management of specific crops will be emphasized.

Course Descriptions

10006133 Introduction to Agribusiness (3 cr.)	Provides an overview of, and exploration into career pathways and employment opportunities, in the agricultural industry. Key issues discussed include trends and economic concepts of production, marketing and consumption of agriculture products, principles of management, and financial management.
10006140 Animal Science Fundamentals (3 cr.)	Provides fundamental knowledge of the animal science field. Topics include animal health, animal environments, anatomy and physiology, genetics and reproduction, animal feedstuffs, and job-related safety. Students will experience animal concepts through the completion of hands-on activities.
10006145 Dairy/Livestock Herd Management (3 cr.)	Covers the herd health and reproductive systems of the dairy and livestock animals. The class will cover various herd health problems, including mastitis, milk fever and similar common livestock health problems. A herd health and reproductive management program will be developed.
10006148 Dairy Genetics and Reproduction (3 cr.)	Designed for the student who needs a comprehensive knowledge of dairy genetics and reproduction. Emphasis is on basic genetic principles and sire selection. Students will learn the anatomy and physiology of the bovine female reproductive tract and the management of the estrous cycle in cattle.
10006149 Dairy/Livestock Records Management (3 cr.)	Acquaints the students with herd management programs using traditional and computerized herd record keeping systems. Students will have hands-on experience with the latest available programs used in dairy record keeping.
10006151 Agribusiness Management (3 cr.)	Focuses on developing management skills and concepts that beginning agri-business professionalsâ€™ need in todayâ€™s changing workplace. Emphasis is given to designing and interpreting agriculture production spreadsheets, interpreting agri-business records, and preparing business and family goals. Complete business management plans will be created.
10006155 Nutrient Management Principles (3 cr.)	Focuses on balancing commercial crop nutrient products and on farm nutrient credits to formulate economical and environmentally safe crop nutrient recommendations. Students will learn how to complete a nutrient management plan utilizing real farm data.
10006169 Dairy/Livestock Artificial Insemination Records & Management (3 cr.)	Teaches students about the anatomy and physiology of cattle reproduction and artificial insemination of the bovine species. Topics include estrous cycle and reproductive records management, nutrition, animal fertility, herd health and sire selection. Site visits will be used to practice estrous detection, insemination techniques and computer analysis. Hands-on computer training with Dairy Comp 305 and PCDART will focus on development of herd protocols and their analysis.

Course Descriptions

10006170 Animal Health (3 cr.)	Examines animal health by studying disease etiology, symptoms, transmission, diagnosis, prevention and control. Learners will focus on a variety of species while using proper veterinary terminology as it relates to disease. Additionally, learners will develop a comprehensive preventative medicine plan for a species of interest.
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
10804123 Math w Business Apps (3 cr.)	This course integrates algebraic concepts, proportions, percents, simple interest, compound interest, annuities, and basic statistics with business/consumer scenarios. It also applies math concepts to the purchasing/buying and selling processes.
10809195 Economics (3 cr.)	This course is designed to give an overview of microeconomics, macroeconomics, and international economics. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues.
10809199 Psychology of Human Relations (3 cr.)	Explores the relationship between the general principles of psychology and our everyday lives. Students are given the opportunity to achieve a deepened sense of awareness of themselves and others. This understanding enables students to improve their relationships with others at work, in the family, and in society.
091 - Animal Dog Grooming	
10145101 Entrepreneurial Mindset (1 cr.)	Inspires and engages participants in fundamental concepts of an entrepreneurial mindset and the unlimited opportunities it can provide. Empowers learners through entrepreneurial thinking and immerses them in entrepreneurial experiences that enable them to develop entrepreneurial skills.

Course Descriptions

30091100 Animal Health & Wellness (2 cr.)	Introduces the major dog breeds, body composition, and various systems using the proper terms. Identify parts of systems and explain their purpose and interaction. Identify warning signals and use critical thinking and problem solving to recommend corrective action. Kenneling and kennel upkeep/sanitation will follow industry standards and be reviewed.
30091104 Grooming Basics (1 cr.)	Participants learn the terms associated with dog grooming. Identify and demonstrate proper use of tools and sanitation requirements. Assess all aspects of the dog's well-being before, during, and after grooming and use critical thinking and problem solving to offer suggestions. Proper industry record keeping will also be explored and followed.
31801318 Communication, Applied (2 cr.)	Focuses on technical vocabulary, business writing, job search strategies, interpersonal communication and oral presentation skills through individual and group activities. Open enrollment for all students. It is recommended, but not required, that the student have basic computer skills, HS GPA 2.75+ OR ACPL Read 54+/Sent 83+, Next Gen Read 250+/Sent 237+, ACT Read 18+/Engl 15+ OR Read Prep 10838105/Sent Prep 74851745 OR not pursuing a degree. Personal/professional development students who have not taken the ACCUPLACER test need to consult with their instructor during the first class.
31809300 Human Relations (2 cr.)	Explores practical applications of issues in psychology and human behavior that affect a person's daily life. The objective is to enhance the student's quality of life by developing an awareness of the connection between his/her personal life and work life. This course is intended for technical diploma students.
31890309 Personal Leadership (2 cr.)	Student will develop skills in personal planning; goal-setting, prioritizing, time management and self-advocacy.
091 - Animal Dog Training	
10145101 Entrepreneurial Mindset (1 cr.)	Inspires and engages participants in fundamental concepts of an entrepreneurial mindset and the unlimited opportunities it can provide. Empowers learners through entrepreneurial thinking and immerses them in entrepreneurial experiences that enable them to develop entrepreneurial skills.
30091100 Animal Health & Wellness (2 cr.)	Introduces the major dog breeds, body composition, and various systems using the proper terms. Identify parts of systems and explain their purpose and interaction. Identify warning signals and use critical thinking and problem solving to recommend corrective action. Kenneling and kennel upkeep/sanitation will follow industry standards and be reviewed.

Course Descriptions

30091101 Teaching Dog Training (3 cr.) Introduces students to the skills needed to teach dog training classes to the public. Participants will practice teaching single event topics as well as multi-week training plans. Interpretation of the rules for Trick titles, Canine Good Citizen, Rally and Dog Parkour will be needed to allow delivery of classes to handlers and dogs. Participants will assess handler/dog performance in a simulated test environment.

31801318 Communication, Applied (2 cr.) Focuses on technical vocabulary, business writing, job search strategies, interpersonal communication and oral presentation skills through individual and group activities. Open enrollment for all students. It is recommended, but not required, that the student have basic computer skills, HS GPA 2.75+ OR ACPL Read 54+/Sent 83+, Next Gen Read 250+/Sent 237+, ACT Read 18+/Engl 15+ OR Read Prep 10838105/Sent Prep 74851745 OR not pursuing a degree. Personal/professional development students who have not taken the ACCUPLACER test need to consult with their instructor during the first class.

31809300 Human Relations (2 cr.) Explores practical applications of issues in psychology and human behavior that affect a person's daily life. The objective is to enhance the student's quality of life by developing an awareness of the connection between his/her personal life and work life. This course is intended for technical diploma students.

31890309 Personal Leadership (2 cr.) Student will develop skills in personal planning; goal-setting, prioritizing, time management and self-advocacy.

091 - Animal Veterinary Technician

10006140 Animal Science Fundamentals (3 cr.) Provides fundamental knowledge of the animal science field. Topics include animal health, animal environments, anatomy and physiology, genetics and reproduction, animal feedstuffs, and job-related safety. Students will experience animal concepts through the completion of hands-on activities.

10006170 Animal Health (3 cr.) Examines animal health by studying disease etiology, symptoms, transmission, diagnosis, prevention and control. Learners will focus on a variety of species while using proper veterinary terminology as it relates to disease. Additionally, learners will develop a comprehensive preventative medicine plan for a species of interest.

10091108 Animal Health 2 (2 cr.) Covers etiology, symptoms, transmission, diagnosis, prevention and control of common diseases in a wide variety of animal species and also those diseases transmissible to humans. Toxic plants and other substances, as well as reporting, sample collection and monitoring of federally regulated diseases will also be discussed.

Course Descriptions

10091110 Pharmacology 2-Animal (2 cr.)	Introduction to drugs and other substances used in veterinary medicine. Emphasizes drug usage, client education, measurement, administration, and safe storage of cardiac, respiratory, gastrointestinal, chemotherapy, ophthalmic and other drugs.
10091114 Internship-Veterinary Technician Program (3 cr.)	Integrates students into the practical clinical setting. The internship course is offered during the spring term and requires a minimum of eight weeks, and completion of a minimum of 240 hours. The student's work is supervised by assigned instructors.
10091120 Veterinary Clinical Pathology 1 (3 cr.)	Introduces laboratory equipment, elementary laboratory procedures and the principles of microscopy, parasitology, urine analysis, hematology and bacteriology.
10091122 Advanced Topics in Veterinary Medicine (1 cr.)	Addresses current topics and advanced diagnostic procedures in veterinary medicine.
10091123 Lab Animal and Exotics (2 cr.)	Includes the history of laboratory animal technology and laboratory animal uses. Emphasizes the Animal Welfare Act and other regulations pertaining to the care of laboratory animals. Covers laboratory animal husbandry in depth as students provide care and treatment for a colony of laboratory animals.
10091124 Veterinary Clinical Pathology 2 (3 cr.)	Expands upon the principles, procedures and skills learned in Vet. Clinical Pathology, including hematology, parasitology, urine analysis, microbiology, cytology, mycology, virology, serology, immunology and blood chemistries. Will continue to expand upon the use of microscopes, as well as automated laboratory procedures for hematology and clinical chemistries.
10091127 Veterinary Surgical Nursing 1 (3 cr.)	Covers surgical instruments, package prep, patient prep, anesthesia, monitoring and post-op care.
10091128 Animal Nursing (2 cr.)	Designed to build upon nursing skills learned in Animal Care & Management 1 and 2, with emphasis on anesthetic techniques, surgical preparation and monitoring of all species.
10091131 Veterinary Office Procedures 1 (1 cr.)	Covers the development of appropriate public, client and staff relations. Telephone etiquette, making appointments, managing records, client services and education, and personal grooming and attire will be addressed. Legal requirements of record keeping as well as an introduction to the rules and regulations governing the veterinary and laboratory animal technician will also be discussed.
10091132 Veterinary Office Procedures 2 (1 cr.)	Covers office documents, patient records, billing, estimates, etc., using veterinary office software.
10091140 Animal Anatomy & Physiology 1 (3 cr.)	Emphasizes terminology, functions, location, identification and organization of anatomical structures that are parts of body systems. Students dissect and study cadavers and tissue specimens from common domestic species.

Course Descriptions

10091152 Veterinary Surgical Nursing 2 (3 cr.)	Focuses on the continuation of basic surgical nursing and anesthesia skills. Also covers basic dental prophylaxis, dental radiography, and cardiopulmonary resuscitation.
10091153 Veterinary Diagnostic Imaging 1 (2 cr.)	Explores concepts in veterinary radiology, with emphasis on both large and small animals
10091170 Veterinary Medical Terminology (2 cr.)	Teaches acceptable veterinary medical terminology for common clinically recognizable diseases, operations, systems and procedures, as well as common medical signs, abbreviations and colloquial vocabulary.
10091171 Animal Care and Management 1 (3 cr.)	Focuses on handling and husbandry of the animals most commonly seen in veterinary medicine. Includes animal behavior, nutrition, and healthcare.
10091173 Animal Care And Management 2 (2 cr.)	Focuses on handling, medical nursing and disease processes of animals most commonly seen in veterinary medicine
10091180 Veterinary Technician Clinical Skills (1 cr.)	Designed to further develop skills in surgical assisting, laboratory evaluation, radiology, pharmacology, animal care and restraint, and office management in preparation for the veterinary technician program internship
10091181 Veterinary Diagnostic Imaging 2 (2 cr.)	Develops skills in veterinary radiology, with emphasis on both large and small animals. Emphasizes radiology skills as well as electrocardiography, ultrasound, endoscopy and other special imaging procedures and technologies.
10091191 Pharmacology 1-Animals (2 cr.)	Introduces drugs and other substances used in veterinary medicine. Emphasizes drug usage, client education, measurement, administration, and safe storage of anti-parasitics, anti-inflammatories, antibiotics and nervous system drugs.
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
10806105 Principles of Animal Biology (4 cr.)	Introductory course focused on general biological principles, cell structure and function, genetics, organ system anatomy and physiology, behavior, evolution, and ecology. May include dissection of fresh and/or preserved materials.

Course Descriptions

- 10809196 Intro to Sociology (3 cr.)** Introduces students to the fundamental sociological concepts, including sociological perspectives, research methods, the significance of culture in society, and the socialization process. Other topics include deviance, the impact of groups on behavior, societal inequities, global changes, the role of social institutions, and social stratification.
- 10809198 Intro to Psychology (3 cr.)** This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.

092 - Farm Precision Agriculture Technician

- 10006115 Agriculture Internship (2 cr.)** Provides students the opportunity to complete 144 hours of work experience in cooperation with an employer and FVTC. Students will give weekly work experience reports. Work Experience site visits will be completed by FVTC staff.
- 10006117 Agriculture Career Preparation (1 cr.)** Assists students with career planning and business skills related to obtaining employment. An independent work experience is planned with each student in cooperation with an employer and FVTC staff.
- 10006119 Agricultural Crop Production (3 cr.)** Prepares students to recognize and implement basic crop production management techniques for corn, soybeans, alfalfa, small grains and general forages used on Wisconsin farms. Field preparation, fertility, seed selection, planting and in-season management of specific crops will be emphasized.
- 10006150 Agronomy Equipment (3 cr.)** Provides students with an overview of various types of agronomy-related equipment including chemical and fertilizer applicators, planters and grain drills. Equipment operation, maintenance, calibration and safety will be emphasized. Both large and small equipment will be operated during the class.
- 10006154 Precision Ag Overview (3 cr.)** Provides an overview of precision farming concepts and the tools of precision farming (GPS, GIS and VRT). Covers the introductory use of each of these tools in the processes of a precision farming system. Hands-on activities with real farm data will provide an initial experience in the use of these tools. Economic and environmental benefits will also be discussed.
- 10006159 Precision Agriculture Advanced (3 cr.)** Explores future trends in the precision agriculture field. This course will expose students to new and emerging trends as they become available to the agriculture and precision farming industry. Students will learn how the technology works through hands-on activities and will also learn how to adapt the technology to current practices. Students will learn about unmanned aerial vehicles and FAA rules and regulations.

Course Descriptions

10006163 GIS Applications (3 cr.)	Prepares students in the use of various Geographic Information Systems utilized in precision farming. Students will learn how to install and set up GIS software, transfer data, process field data, and create reports and/or prescription maps. Students will utilize hands-on computer exercises with real farm data to provide a practical experience.
10070103 Intro to Service Maintenance & Principles (3 cr.)	Introduces students to service department functions, service related programs, and principles. Exposure to compact equipment with attachments. Students will learn assembly, pre-delivery, preventative maintenance inspection, along with basic maintenance techniques.
10070120 Ag Planting Equipment (3 cr.)	Provides a comprehensive study of planting equipment. There will be extensive coverage of planting and seeding equipment. Units to be covered will include no-till drills, corn planters and seed metering units. Students will work with the seed metering test stand to rebuild and calibrate the seed meters.
10070131 Ag DC Electrical Systems (3 cr.)	Focuses on DC electron flow theory, different types of circuits and troubleshooting the circuits. Students will also use schematics to diagnosis problems. Starting and charging systems will be covered.
10070137 Precision Equipment Systems (3 cr.)	Introduces the student to the different precision farming GPS systems used on agriculture equipment. Students will learn proper set-up and installation of the systems. Students will work in the field with adjustments and settings as well as the GPS display and the different functions.

092 - Farm Precision Agriculture Technology

10006115 Agriculture Internship (2 cr.)	Provides students the opportunity to complete 144 hours of work experience in cooperation with an employer and FVTC. Students will give weekly work experience reports. Work Experience site visits will be completed by FVTC staff.
10006117 Agriculture Career Preparation (1 cr.)	Assists students with career planning and business skills related to obtaining employment. An independent work experience is planned with each student in cooperation with an employer and FVTC staff.
10006119 Agricultural Crop Production (3 cr.)	Prepares students to recognize and implement basic crop production management techniques for corn, soybeans, alfalfa, small grains and general forages used on Wisconsin farms. Field preparation, fertility, seed selection, planting and in-season management of specific crops will be emphasized.
10006141 Crop Science (3 cr.)	Provides fundamental knowledge of the major crops grown in Wisconsin. Topics include crop growth and development, physiology, and nutrition; seed germination and selection; environmental factors and agronomic problems that affect crop development.

Course Descriptions

10006143 Introduction to Soils (3 cr.)	Provides fundamental knowledge of soils and growth media. Course topics include soil formation and development, soil components, soil profile, soil classification and soil conservation. Students will experience soils concepts through the completion of hands-on activities.
10006150 Agronomy Equipment (3 cr.)	Provides students with an overview of various types of agronomy-related equipment including chemical and fertilizer applicators, planters and grain drills. Equipment operation, maintenance, calibration and safety will be emphasized. Both large and small equipment will be operated during the class.
10006154 Precision Ag Overview (3 cr.)	Provides an overview of precision farming concepts and the tools of precision farming (GPS, GIS and VRT). Covers the introductory use of each of these tools in the processes of a precision farming system. Hands-on activities with real farm data will provide an initial experience in the use of these tools. Economic and environmental benefits will also be discussed.
10006155 Nutrient Management Principles (3 cr.)	Focuses on balancing commercial crop nutrient products and on farm nutrient credits to formulate economical and environmentally safe crop nutrient recommendations. Students will learn how to complete a nutrient management plan utilizing real farm data.
10006159 Precision Agriculture Advanced (3 cr.)	Explores future trends in the precision agriculture field. This course will expose students to new and emerging trends as they become available to the agriculture and precision farming industry. Students will learn how the technology works through hands-on activities and will also learn how to adapt the technology to current practices. Students will learn about unmanned aerial vehicles and FAA rules and regulations.
10006163 GIS Applications (3 cr.)	Prepares students in the use of various Geographic Information Systems utilized in precision farming. Students will learn how to install and set up GIS software, transfer data, process field data, and create reports and/or prescription maps. Students will utilize hands-on computer exercises with real farm data to provide a practical experience.
10070103 Intro to Service Maintenance & Principles (3 cr.)	Introduces students to service department functions, service related programs, and principles. Exposure to compact equipment with attachments. Students will learn assembly, pre-delivery, preventative maintenance inspection, along with basic maintenance techniques.
10070110 Agriculture Hydraulic Systems (2 cr.)	Introduces the student to the fundamentals of fluid power, components, different hydraulic systems, hydraulic schematics and terminology of the hydraulic systems used on modern agriculture mobile equipment. Includes operation of fluid flow on various systems, maintenance and system diagnostics. Students are exposed to the special tools used to test hydraulic systems. The use of these special tools and technical manuals are stressed.

Course Descriptions

- 10070120 Ag Planting Equipment (3 cr.)** Provides a comprehensive study of planting equipment. There will be extensive coverage of planting and seeding equipment. Units to be covered will include no-till drills, corn planters and seed metering units. Students will work with the seed metering test stand to rebuild and calibrate the seed meters.
- 10070131 Ag DC Electrical Systems (3 cr.)** Focuses on DC electron flow theory, different types of circuits and troubleshooting the circuits. Students will also use schematics to diagnosis problems. Starting and charging systems will be covered.
- 10070136 AG DC Electronic Systems (3 cr.)** Focuses on electrical and electronic circuits used on DC electrical systems in agricultural equipment. Students will develop the knowledge and skills associated with diagnosing and troubleshooting these circuits. Students will learn the functions of the electronic systems. Computer use will be stressed.
- 10070137 Precision Equipment Systems (3 cr.)** Introduces the student to the different precision farming GPS systems used on agriculture equipment. Students will learn proper set-up and installation of the systems. Students will work in the field with adjustments and settings as well as the GPS display and the different functions.
- 10801195 Written Communication (3 cr.)** Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
- 10801196 Oral/Interpersonal Comm (3 cr.)** Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
- 10804123 Math w Business Apps (3 cr.)** This course integrates algebraic concepts, proportions, percents, simple interest, compound interest, annuities, and basic statistics with business/consumer scenarios. It also applies math concepts to the purchasing/buying and selling processes.
- 10809195 Economics (3 cr.)** This course is designed to give an overview of microeconomics, macroeconomics, and international economics. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues.

Course Descriptions

10809199 Psychology of Human Relations (3 cr.)

Explores the relationship between the general principles of psychology and our everyday lives. Students are given the opportunity to achieve a deepened sense of awareness of themselves and others. This understanding enables students to improve their relationships with others at work, in the family, and in society.

101 - Accounting

10101101 Applied Accounting Capstone (3 cr.)

Provides students an opportunity to demonstrate their attainment of program outcomes through the completion of a project which accounts for a small business through the accounting cycle using accounting software and completion of year end financial statements, analysis and projections.

10101104 QuickBooks Accounting Online (2 cr.)

Lays the foundation for students to gain experience using QuickBooks Pro. Students practice creating a company using a chart of accounts, creating vendors and customers, demo payroll, record transactions, and generate and use financial reports. Being familiar with Windows, business experience or completion of an accounting course is helpful. Upon completion of this course, students are eligible to take the QuickBooks Certification exam.

10101132 Cost Accounting (4 cr.)

Presents fundamental cost accounting concepts and objectives as well as comprehensive illustrations of the flow of costs in manufacturing systems. The planning and control phases of cost elements (material, labor and factory overhead) are covered in relation to job order and process costing systems, and CVP analysis. Students learn about tools for planning and control through budgeting and variance analysis, inventory costing and management using JIT, and also understand accounting aspects of department and product costs.

10101145 Spreadsheets, Beginning (1 cr.)

Covers developing, constructing and printing basic business-related worksheets and reports using spreadsheet software. Students create, modify and print various charts based on worksheet data.

10101152 Spreadsheets, Intermediate (1 cr.)

Covers developing and editing business-related worksheets. Students examine various functions such as If, Round, Sum, Average and Pmt. They also use Data Tables, Goal Seek, Scenarios and Solver to assist in decision making.

10101153 Spreadsheets, Advanced (2 cr.)

Focuses on spreadsheet topics and functions that enhance student expertise.

10101180 Financial Accounting 1 (4 cr.)

Prepares students to analyze, record, summarize and interpret accounting information. The course focuses on business transactions, financial statements, merchandising, inventory, special journals, internal controls, receivables, plant assets and payroll.

Course Descriptions

10101181 Financial Accounting 2 (4 cr.)	Presents basic concepts for partnerships and corporations. It introduces bonds, cash flow statement preparation, financial statement analysis, budgeting and job cost procedures. The course includes a practice set using job costing.
10101182 Intermediate Accounting (4 cr.)	Reviews accounting and recording processes, temporary investments, cash flows, revenue recognition and financial statement analysis.
10101186 Income Tax Accounting (4 cr.)	Emphasizes correct completion of simple mid-level individual federal income tax returns and forms. Focuses on income tax withholding and basic reporting requirements, interest and dividends, business expenses, itemized deductions, capital gains and losses.
10101187 Business and Personal Tax (3 cr.)	Covers corporate tax, sales and use tax, personal property tax, and other taxes not covered in Income Tax Accounting.
10101190 Financial Fraud Detection, Fundamentals of (1 cr.)	Focuses on accounting information systems and accounting processes related to sales, purchasing, etc. Covers internal controls designed to mitigate and prevent financial fraud.
10101193 Great Plains-Enterprise Resource Planning System (1 cr.)	Gain experience working on Great Plains software, Enterprise Resource Planning Systems. Learn how to build the Chart of Accounts, set up the company's accounting system, enter monthly transactions and run financial statements for multiple accounting periods.
10101194 Payroll (2 cr.)	Presents payroll calculation and preparation of payroll. Topics include federal and state laws, calculation and payment of payroll taxes, completion of government forms. Proficiency with electronic calculators is recommended.
10101195 Advanced Payroll (1 cr.)	Presents preparation of payroll-related journal entries. A computer practice set is included. Proficiency with electronic calculators is recommended.
10102103 Business Law 1 (3 cr.)	Introduces legal principles and standard business law concepts and their implications for business. It emphasizes contracts, sales, commercial paper, bailment, agency and real property, with references to the Uniform Commercial Code and recent consumer legislation.
10103120 MS Office Suite, Introduction (2 cr.)	Provides an opportunity to gain technical skills employers are seeking, by using the features in Outlook, Word, Excel, and PowerPoint. Through hands-on course work, students will be able to integrate Word, Excel and PowerPoint.
10106199 Business Career Planning (1 cr.)	Provides students with information and tools to prepare for a Business career. Students will demonstrate professionalism and develop professional employment documents, business communications, and interview strategies.

Course Descriptions

10801195 Written Communication (3 cr.) Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.

10801196 Oral/Interpersonal Comm (3 cr.) Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.

10804123 Math w Business Apps (3 cr.) This course integrates algebraic concepts, proportions, percents, simple interest, compound interest, annuities, and basic statistics with business/consumer scenarios. It also applies math concepts to the purchasing/buying and selling processes.

10809166 Intro to Ethics: Theory & App (3 cr.) This course provides a basic understanding of the theoretical foundations of ethical thought. Diverse ethical perspectives will be used to analyze and compare relevant issues. Students will critically evaluate individual, social and professional standards of behavior, and apply a systematic decision-making process to these situations.

10809195 Economics (3 cr.) This course is designed to give an overview of microeconomics, macroeconomics, and international economics. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues.

10809199 Psychology of Human Relations (3 cr.) Explores the relationship between the general principles of psychology and our everyday lives. Students are given the opportunity to achieve a deepened sense of awareness of themselves and others. This understanding enables students to improve their relationships with others at work, in the family, and in society.

101 - Accounting Assistant

10101104 QuickBooks Accounting Online (2 cr.)

Lays the foundation for students to gain experience using QuickBooks Pro. Students practice creating a company using a chart of accounts, creating vendors and customers, demo payroll, record transactions, and generate and use financial reports. Being familiar with Windows, business experience or completion of an accounting course is helpful. Upon completion of this course, students are eligible to take the QuickBooks Certification exam.

Course Descriptions

10101145 Spreadsheets, Beginning (1 cr.)	Covers developing, constructing and printing basic business-related worksheets and reports using spreadsheet software. Students create, modify and print various charts based on worksheet data.
10101152 Spreadsheets, Intermediate (1 cr.)	Covers developing and editing business-related worksheets. Students examine various functions such as If, Round, Sum, Average and Pmt. They also use Data Tables, Goal Seek, Scenarios and Solver to assist in decision making.
10101153 Spreadsheets, Advanced (2 cr.)	Focuses on spreadsheet topics and functions that enhance student expertise.
10101180 Financial Accounting 1 (4 cr.)	Prepares students to analyze, record, summarize and interpret accounting information. The course focuses on business transactions, financial statements, merchandising, inventory, special journals, internal controls, receivables, plant assets and payroll.
10101181 Financial Accounting 2 (4 cr.)	Presents basic concepts for partnerships and corporations. It introduces bonds, cash flow statement preparation, financial statement analysis, budgeting and job cost procedures. The course includes a practice set using job costing.
10101190 Financial Fraud Detection, Fundamentals of (1 cr.)	Focuses on accounting information systems and accounting processes related to sales, purchasing, etc. Covers internal controls designed to mitigate and prevent financial fraud.
10101194 Payroll (2 cr.)	Presents payroll calculation and preparation of payroll. Topics include federal and state laws, calculation and payment of payroll taxes, completion of government forms. Proficiency with electronic calculators is recommended.
10101195 Advanced Payroll (1 cr.)	Presents preparation of payroll-related journal entries. A computer practice set is included. Proficiency with electronic calculators is recommended.
10102103 Business Law 1 (3 cr.)	Introduces legal principles and standard business law concepts and their implications for business. It emphasizes contracts, sales, commercial paper, bailment, agency and real property, with references to the Uniform Commercial Code and recent consumer legislation.
10103120 MS Office Suite, Introduction (2 cr.)	Provides an opportunity to gain technical skills employers are seeking, by using the features in Outlook, Word, Excel, and PowerPoint. Through hands-on course work, students will be able to integrate Word, Excel and PowerPoint.
10106199 Business Career Planning (1 cr.)	Provides students with information and tools to prepare for a Business career. Students will demonstrate professionalism and develop professional employment documents, business communications, and interview strategies.

Course Descriptions

10801195 Written Communication (3 cr.) Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.

10801196 Oral/Interpersonal Comm (3 cr.) Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.

10804123 Math w Business Apps (3 cr.) This course integrates algebraic concepts, proportions, percents, simple interest, compound interest, annuities, and basic statistics with business/consumer scenarios. It also applies math concepts to the purchasing/buying and selling processes.

101 - Bookkeeper

10101104 QuickBooks Accounting Online (2 cr.)

Lays the foundation for students to gain experience using QuickBooks Pro. Students practice creating a company using a chart of accounts, creating vendors and customers, demo payroll, record transactions, and generate and use financial reports. Being familiar with Windows, business experience or completion of an accounting course is helpful. Upon completion of this course, students are eligible to take the QuickBooks Certification exam.

10101145 Spreadsheets, Beginning (1 cr.)

Covers developing, constructing and printing basic business-related worksheets and reports using spreadsheet software. Students create, modify and print various charts based on worksheet data.

10101152 Spreadsheets, Intermediate (1 cr.)

Covers developing and editing business-related worksheets. Students examine various functions such as If, Round, Sum, Average and Pmt. They also use Data Tables, Goal Seek, Scenarios and Solver to assist in decision making.

10101180 Financial Accounting 1 (4 cr.)

Prepares students to analyze, record, summarize and interpret accounting information. The course focuses on business transactions, financial statements, merchandising, inventory, special journals, internal controls, receivables, plant assets and payroll.

10101194 Payroll (2 cr.)

Presents payroll calculation and preparation of payroll. Topics include federal and state laws, calculation and payment of payroll taxes, completion of government forms. Proficiency with electronic calculators is recommended.

10101195 Advanced Payroll (1 cr.)

Presents preparation of payroll-related journal entries. A computer practice set is included. Proficiency with electronic calculators is recommended.

Course Descriptions

10103120 MS Office Suite, Introduction (2 cr.) Provides an opportunity to gain technical skills employers are seeking, by using the features in Outlook, Word, Excel, and PowerPoint. Through hands-on course work, students will be able to integrate Word, Excel and PowerPoint.

101 - Fundamentals of Financial Fraud Detection

10101104 QuickBooks Accounting Online (2 cr.) Lays the foundation for students to gain experience using QuickBooks Pro. Students practice creating a company using a chart of accounts, creating vendors and customers, demo payroll, record transactions, and generate and use financial reports. Being familiar with Windows, business experience or completion of an accounting course is helpful. Upon completion of this course, students are eligible to take the QuickBooks Certification exam.

10101145 Spreadsheets, Beginning (1 cr.) Covers developing, constructing and printing basic business-related worksheets and reports using spreadsheet software. Students create, modify and print various charts based on worksheet data.

10101180 Financial Accounting 1 (4 cr.) Prepares students to analyze, record, summarize and interpret accounting information. The course focuses on business transactions, financial statements, merchandising, inventory, special journals, internal controls, receivables, plant assets and payroll.

10101190 Financial Fraud Detection, Fundamentals of (1 cr.) Focuses on accounting information systems and accounting processes related to sales, purchasing, etc. Covers internal controls designed to mitigate and prevent financial fraud.

10114103 Financial Statement Analysis (3 cr.) Examines the basic skills of financial analysis to the prospective lender credit analyst.

10504204 Criminal Justice System (3 cr.) Distinguish the roles of courts and law enforcement agencies; identify the purpose of law enforcement in American society; describe how professionalism and ethics relate to law enforcement; understand crime in America; explain basic aspects of criminal law; gain an understanding of sentencing of offenders as it relates to prison and jails; compare adult and juvenile justice.

10504211 Constitutional Principles (3 cr.) Diagram the structure of the criminal justice system; identify when constitutional rules apply; identify the elements of a lawful arrest; identify the requirements for search warrants, and when warrantless searches are permitted; identify the requirements governing confessions and statements; and analyze the requirements for evidence to be admissible in court.

102 - Business Business Analyst

10102115 Business Analyst Essentials (2 cr.) Provides a foundational understanding of business analysis and the underlying competencies of a business analyst.

Course Descriptions

10102124 BA Planning and Monitoring (3 cr.)	Provides instruction in the multiple approaches used for performing business analysis, planning activities and ongoing communication, defining scopes, process improvements, assumptions, constraints, and dependencies, and the management process.
10102126 Elicitation and Collaboration Techniques (2 cr.)	Define stakeholders and use the stakeholder analysis to conduct elicitation activities accurately capturing information needs, documenting and confirming results. Facilitates meetings and communication plan to support ongoing collaboration.
10102130 Requirements Analysis & Design (3 cr.)	Understand the principles of solution requirements, traceability, measuring, and tracing quality of BA work, utilizing metrics, complying with organizational standards, and managing and supporting organizational change.
10102136 BA Strategy Analysis & Evaluation (3 cr.)	Understand business structure, strategy, and impact of work efforts; define the importance of vision, strategy, goals and objectives; define solution scope; and examine the connection between technology and business to make strategically informed decisions.
10102198 Business Analyst Career Experience (2 cr.)	Provides students with an opportunity to select any hands-on experience related to Internship or Capstone Project. Instructor approval required.
10103120 MS Office Suite, Introduction (2 cr.)	Provides an opportunity to gain technical skills employers are seeking, by using the features in Outlook, Word, Excel, and PowerPoint. Through hands-on course work, students will be able to integrate Word, Excel and PowerPoint.
10106118 Effective Business Practice (3 cr.)	Focuses on business soft skills to provide students with the ability to conduct themselves in the business world with confidence.
10106199 Business Career Planning (1 cr.)	Provides students with information and tools to prepare for a Business career. Students will demonstrate professionalism and develop professional employment documents, business communications, and interview strategies.
10107158 Systems Analysis (3 cr.)	Introduces the principles and techniques of modern system analysis and design. It explores the fundamentals of traditional systems and methodologies, data flow diagrams and case tools. It also tracks the systems' development life cycle and explains the various stages.
10152168 Data Access for Programmers (3 cr.)	Provides background in fundamental database concepts, design, documentation, implementation and distribution involving the relational database model. Students will create, query and update relational databases using Structured Query Language (SQL).
10196110 Cost Controls and Budgeting (3 cr.)	Examines how financial information is interpreted and applied by supervisors/managers in planning and controlling business activities. This managerial accounting course emphasizes the budgeting process.

Course Descriptions

10196131 Problem Solving (2 cr.)	Presents basic problem-solving techniques. Emphasizes the importance of identifying the real problem, identifying the causes, looking at alternative solutions, arriving at a solution and following up to ensure implementation.
10196188 Project Management, Intro to (3 cr.)	Focuses on how to apply the skills and tools necessary to design, implement and evaluate formal projects. Each learner will write a project proposal, work with project teams, sequence project tasks, develop project budgets, identify project resources, implement the project, chart project progress, deal with variations, evaluate the project, and use various technology in these processes.
10196190 Leadership Development (3 cr.)	Covers the supervisor's role in leadership effectiveness. Topics include theories of leadership, development and implementation of teams, impact of leadership style, philosophy of corporate culture and leadership in the global marketplace.
10623195 Lean Tools (2 cr.)	Introduces useful tools to use when implementing Lean in your organization. Major course topics include team building, lean tools and project management.
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
10804133 Math & Logic (3 cr.)	Students will apply problem solving techniques from discrete mathematics. Topics include symbolic logic, sets, algebra and base number systems.
10809166 Intro to Ethics: Theory & App (3 cr.)	This course provides a basic understanding of the theoretical foundations of ethical thought. Diverse ethical perspectives will be used to analyze and compare relevant issues. Students will critically evaluate individual, social and professional standards of behavior, and apply a systematic decision-making process to these situations.
10809195 Economics (3 cr.)	This course is designed to give an overview of microeconomics, macroeconomics, and international economics. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues.

Course Descriptions

10809198 Intro to Psychology (3 cr.) This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.

10890100 College Success: On Course (1 cr.) On Course helps you learn a number of proven strategies for creating greater academic, professional and personal success. You will discover how to create a rich, fulfilling life by developing new beliefs and behaviors. College Success: On Course empowers you to make wise choices in your academic and personal life which leads to improved experiences and outcomes.

102 - Business Business Essentials

10101107 Accounting, Principles of (3 cr.) Introduces basic concepts and general principles of accounting to non-accounting students. Topics include financial statements, merchandising accounting for cash, inventory, payroll, budgeting and accounting software.

10102112 Business, Introduction to (3 cr.) Provides an overview of the variety of activities in the world of business. It focuses on the responsibilities connected with operating a business from both organizational and managerial viewpoints. It also examines the role of government in business.

10103120 MS Office Suite, Introduction (2 cr.) Provides an opportunity to gain technical skills employers are seeking, by using the features in Outlook, Word, Excel, and PowerPoint. Through hands-on course work, students will be able to integrate Word, Excel and PowerPoint.

102 - Business Business Fundamentals

10102112 Business, Introduction to (3 cr.) Provides an overview of the variety of activities in the world of business. It focuses on the responsibilities connected with operating a business from both organizational and managerial viewpoints. It also examines the role of government in business.

10103120 MS Office Suite, Introduction (2 cr.) Provides an opportunity to gain technical skills employers are seeking, by using the features in Outlook, Word, Excel, and PowerPoint. Through hands-on course work, students will be able to integrate Word, Excel and PowerPoint.

10106118 Effective Business Practice (3 cr.) Focuses on business soft skills to provide students with the ability to conduct themselves in the business world with confidence.

10196191 Supervision (3 cr.) Uses a practical approach to training people in the basics of supervision and management. This course emphasizes the application of theory and covers management functions, the skills needed to perform those functions, the history of management, contemporary management trends, ethics, communication and total quality management.

Course Descriptions

10801195 Written Communication (3 cr.) Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.

102 - Business Business Management

10101107 Accounting, Principles of (3 cr.) Introduces basic concepts and general principles of accounting to non-accounting students. Topics include financial statements, merchandising accounting for cash, inventory, payroll, budgeting and accounting software.

10101145 Spreadsheets, Beginning (1 cr.) Covers developing, constructing and printing basic business-related worksheets and reports using spreadsheet software. Students create, modify and print various charts based on worksheet data.

10102103 Business Law 1 (3 cr.) Introduces legal principles and standard business law concepts and their implications for business. It emphasizes contracts, sales, commercial paper, bailment, agency and real property, with references to the Uniform Commercial Code and recent consumer legislation.

10102106 Business Management Internship (2 cr.) Student obtains and completes an on-the-job supervised work experience in a business. Each student completes a minimum of 144 hours of work experience and participates in on-line course activities.

10102112 Business, Introduction to (3 cr.) Provides an overview of the variety of activities in the world of business. It focuses on the responsibilities connected with operating a business from both organizational and managerial viewpoints. It also examines the role of government in business.

10103120 MS Office Suite, Introduction (2 cr.) Provides an opportunity to gain technical skills employers are seeking, by using the features in Outlook, Word, Excel, and PowerPoint. Through hands-on course work, students will be able to integrate Word, Excel and PowerPoint.

10104117 Sales Principles (3 cr.) Introduces and teaches the skills used by sales and marketing professionals to succeed in their careers. It includes concepts relating to customer relationship development, creating valuable business solutions, and professional sales behaviors. Explores written, verbal, and nonverbal communication best practices. Introduces the sales process and how it can be used to promote ideas in the work place.

Course Descriptions

10104151 Marketing 1, Principles of (3 cr.)	Introduces students to the marketing function and process. Techniques for analyzing the marketing environment and understanding customers' needs and wants are explored. Students apply marketing principles to select target markets, develop positioning and create marketing programs to serve markets. Topics include product management and development, pricing, distribution and promotion strategies.
10106118 Effective Business Practice (3 cr.)	Focuses on business soft skills to provide students with the ability to conduct themselves in the business world with confidence.
10106199 Business Career Planning (1 cr.)	Provides students with information and tools to prepare for a Business career. Students will demonstrate professionalism and develop professional employment documents, business communications, and interview strategies.
10116155 Business Ethics (3 cr.)	Explores ethical considerations and sustainability issues across business areas such as human resources, accounting and marketing. Examines the differences between legal and ethical decision making.
10116193 Human Resources, Introduction to (3 cr.)	Covers human resources planning and processes. Topics include human resource development, employee selection, performance appraisals, compensation, training, labor relations, motivation, teamwork and introduces employment related laws.
10196110 Cost Controls and Budgeting (3 cr.)	Examines how financial information is interpreted and applied by supervisors/managers in planning and controlling business activities. This managerial accounting course emphasizes the budgeting process.
10196131 Problem Solving (2 cr.)	Presents basic problem-solving techniques. Emphasizes the importance of identifying the real problem, identifying the causes, looking at alternative solutions, arriving at a solution and following up to ensure implementation.
10196190 Leadership Development (3 cr.)	Covers the supervisor's role in leadership effectiveness. Topics include theories of leadership, development and implementation of teams, impact of leadership style, philosophy of corporate culture and leadership in the global marketplace.
10196191 Supervision (3 cr.)	Uses a practical approach to training people in the basics of supervision and management. This course emphasizes the application of theory and covers management functions, the skills needed to perform those functions, the history of management, contemporary management trends, ethics, communication and total quality management.

Course Descriptions

10801195 Written Communication (3 cr.) Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.

10801196 Oral/Interpersonal Comm (3 cr.) Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.

10804123 Math w Business Apps (3 cr.) This course integrates algebraic concepts, proportions, percents, simple interest, compound interest, annuities, and basic statistics with business/consumer scenarios. It also applies math concepts to the purchasing/buying and selling processes.

10809195 Economics (3 cr.) This course is designed to give an overview of microeconomics, macroeconomics, and international economics. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues.

10809198 Intro to Psychology (3 cr.) This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.

102 - Business Business Operations

10101107 Accounting, Principles of (3 cr.) Introduces basic concepts and general principles of accounting to non-accounting students. Topics include financial statements, merchandising accounting for cash, inventory, payroll, budgeting and accounting software.

10102103 Business Law 1 (3 cr.) Introduces legal principles and standard business law concepts and their implications for business. It emphasizes contracts, sales, commercial paper, bailment, agency and real property, with references to the Uniform Commercial Code and recent consumer legislation.

10102112 Business, Introduction to (3 cr.) Provides an overview of the variety of activities in the world of business. It focuses on the responsibilities connected with operating a business from both organizational and managerial viewpoints. It also examines the role of government in business.

Course Descriptions

10103120 MS Office Suite, Introduction (2 cr.)	Provides an opportunity to gain technical skills employers are seeking, by using the features in Outlook, Word, Excel, and PowerPoint. Through hands-on course work, students will be able to integrate Word, Excel and PowerPoint.
10104117 Sales Principles (3 cr.)	Introduces and teaches the skills used by sales and marketing professionals to succeed in their careers. It includes concepts relating to customer relationship development, creating valuable business solutions, and professional sales behaviors. Explores written, verbal, and nonverbal communication best practices. Introduces the sales process and how it can be used to promote ideas in the work place.
10104151 Marketing 1, Principles of (3 cr.)	Introduces students to the marketing function and process. Techniques for analyzing the marketing environment and understanding customers' needs and wants are explored. Students apply marketing principles to select target markets, develop positioning and create marketing programs to serve markets. Topics include product management and development, pricing, distribution and promotion strategies.
10116193 Human Resources, Introduction to (3 cr.)	Covers human resources planning and processes. Topics include human resource development, employee selection, performance appraisals, compensation, training, labor relations, motivation, teamwork and introduces employment related laws.
10196191 Supervision (3 cr.)	Uses a practical approach to training people in the basics of supervision and management. This course emphasizes the application of theory and covers management functions, the skills needed to perform those functions, the history of management, contemporary management trends, ethics, communication and total quality management.
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
10804123 Math w Business Apps (3 cr.)	This course integrates algebraic concepts, proportions, percents, simple interest, compound interest, annuities, and basic statistics with business/consumer scenarios. It also applies math concepts to the purchasing/buying and selling processes.
10809198 Intro to Psychology (3 cr.)	This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.

Course Descriptions

102 - Business Project Specialist

10102124 BA Planning and Monitoring (3 cr.)	Provides instruction in the multiple approaches used for performing business analysis, planning activities and ongoing communication, defining scopes, process improvements, assumptions, constraints, and dependencies, and the management process.
10102126 Elicitation and Collaboration Techniques (2 cr.)	Define stakeholders and use the stakeholder analysis to conduct elicitation activities accurately capturing information needs, documenting and confirming results. Facilitates meetings and communication plan to support ongoing collaboration.
10103120 MS Office Suite, Introduction (2 cr.)	Provides an opportunity to gain technical skills employers are seeking, by using the features in Outlook, Word, Excel, and PowerPoint. Through hands-on course work, students will be able to integrate Word, Excel and PowerPoint.
10106118 Effective Business Practice (3 cr.)	Focuses on business soft skills to provide students with the ability to conduct themselves in the business world with confidence.
10106199 Business Career Planning (1 cr.)	Provides students with information and tools to prepare for a Business career. Students will demonstrate professionalism and develop professional employment documents, business communications, and interview strategies.
10107158 Systems Analysis (3 cr.)	Introduces the principles and techniques of modern system analysis and design. It explores the fundamentals of traditional systems and methodologies, data flow diagrams and case tools. It also tracks the systems' development life cycle and explains the various stages.
10196110 Cost Controls and Budgeting (3 cr.)	Examines how financial information is interpreted and applied by supervisors/managers in planning and controlling business activities. This managerial accounting course emphasizes the budgeting process.
10196131 Problem Solving (2 cr.)	Presents basic problem-solving techniques. Emphasizes the importance of identifying the real problem, identifying the causes, looking at alternative solutions, arriving at a solution and following up to ensure implementation.
10196188 Project Management, Intro to (3 cr.)	Focuses on how to apply the skills and tools necessary to design, implement and evaluate formal projects. Each learner will write a project proposal, work with project teams, sequence project tasks, develop project budgets, identify project resources, implement the project, chart project progress, deal with variations, evaluate the project, and use various technology in these processes.
10623195 Lean Tools (2 cr.)	Introduces useful tools to use when implementing Lean in your organization. Major course topics include team building, lean tools and project management.

Course Descriptions

10801195 Written Communication (3 cr.) Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.

10801196 Oral/Interpersonal Comm (3 cr.) Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.

103 - Computer Essential Office Skills Training

10103107 Basic Computer Skills (1 cr.) Explores the basics of computer operations, including keyboarding, organization of files and folders, working with Internet, basic software, and identification of the hardware pieces that make up a standard computer system.

10103120 MS Office Suite, Introduction (2 cr.) Provides an opportunity to gain technical skills employers are seeking, by using the features in Outlook, Word, Excel, and PowerPoint. Through hands-on course work, students will be able to integrate Word, Excel and PowerPoint.

10106103 Intro to Office Careers (1 cr.) Focuses on career expectations, professional resources, and skills needed to prepare students for the Office Assistant and Administrative Professional programs.

103 - Computer Microsoft Office Fundamentals

10103140 MS Word 2010 Introduction (1 cr.) Presents the basic features of Microsoft Word. Learners create, edit, and save documents, format characters, paragraphs, pages and documents, and apply special features when formatting.

10103142 MS PowerPoint 2010 Introduction (1 cr.) Presents the basic features of Microsoft PowerPoint. Learners create, edit and animate presentations, work with tables, charts, graphics, and custom shows, and learn to integrate, share and protect presentations.

10103145 MS Excel 2010 Introduction (1 cr.) Presents basic features of Microsoft Excel. Learners develop basic skills to create, edit, and format worksheets; use functions; set print options; add visual elements; work with multiple worksheets, tables, and other file formats; and integration with Word.

103 - Computer Microsoft Office Suite

10103180 MS Word Introduction (1 cr.) Presents basic features of Microsoft Word. Learn how to create, edit, and save documents; format characters, paragraphs, pages, and documents; apply special features when formatting; and create a merged document.

10103181 MS Excel Introduction (1 cr.) Presents basic features of Microsoft Excel. Learn how to create, format, and edit worksheets; create formulas and tables; manage large workbooks; and analyze data with charts and What-If Analysis tools.

Course Descriptions

- 10103183 MS PowerPoint Introduction (1 cr.)** Presents the basic features of Microsoft PowerPoint. Learn how to create, edit, and format presentations; and enhance a presentation with animation, video, tables, and charts.
- 10106113 Microsoft Outlook (2 cr.)** Introduces students to email communication, appointments, and meeting scheduling within Microsoft Outlook. In addition, students will learn and explore various customization options available within Microsoft Outlook.

103 - Computer Microsoft Office Suite Applications 1

- 10103140 MS Word 2010 Introduction (1 cr.)** Presents the basic features of Microsoft Word. Learners create, edit, and save documents, format characters, paragraphs, pages and documents, and apply special features when formatting.
- 10103142 MS PowerPoint 2010 Introduction (1 cr.)** Presents the basic features of Microsoft PowerPoint. Learners create, edit and animate presentations, work with tables, charts, graphics, and custom shows, and learn to integrate, share and protect presentations.
- 10103143 MS Access 2010 Introduction (1 cr.)** Presents the basic features of Microsoft Access. Learners enter and edit data in tables, create and apply queries, produce reports and forms, import and export data, and integrate Access data with other programs.
- 10103145 MS Excel 2010 Introduction (1 cr.)** Presents basic features of Microsoft Excel. Learners develop basic skills to create, edit, and format worksheets; use functions; set print options; add visual elements; work with multiple worksheets, tables, and other file formats; and integration with Word.
- 10106107 Keyboarding for PC Users (1 cr.)** Introduces keying by touch. It emphasizes control of the alphabetic keys and the numeric keypad. Practice drills to improve keying skills are included.

103 - Computer Microsoft Office Suite Applications Intermediate

- 10103141 MS Word 2010 Intermediate (1 cr.)** Focuses on functions to format, customize and proof documents, automate and customize formatting, navigate in a document, insert special features and references, create specialized tables and indexes, work with shared documents, and protect and prepare documents.
- 10103144 MS Access 2010 Intermediate (1 cr.)** Presents designing the structure of tables; building relationships; creating advanced queries, forms and reports; and using Access tools and managing objects. Learners automate, customize, secure and integrate Access data.
- 10103146 MS Excel 2010 Intermediate (1 cr.)** Analyze data, apply conditional formatting, apply data validation, use advanced functions, use what-if analysis, work with pivot tables and charts, create tables, create basic macros, share workbooks, track changes, link and consolidate data from other workbooks and worksheets, and import data from and export data to other programs.

104 - Marketing & Merchandising Digital Marketing

Course Descriptions

10103108 Technology Tools for Marketing, Data (2 cr.)	Focuses on the basics of Microsoft Excel by showing how to work with marketing data sources using formulas and functions for analysis. Students will gain Microsoft Excel skills to apply pivot tables, different lookup types, basic troubleshooting and data manipulation commands.
10103109 Technology Tools for Marketing, Communication (2 cr.)	Introduces students to the fundamentals of the software used to create video, images and content for mobile, social and online advertising. In addition, students will learn how to publish video and images online.
10104100 Digital Marketing (3 cr.)	Focuses on best practices for web site analysis, usability and site conversion. Students will learn how to apply basic UX (usability) concepts, site analysis data, search engine optimization (SEO), and email marketing to attract, grow and retain customers.
10104101 Marketing Analytics (3 cr.)	Focuses on how websites, social media and online campaign metrics can help businesses manage marketing programs. Students will be exposed to industry analytic tools, trends and concepts.
10104103 Promotion Principles (3 cr.)	Introduces the concept of integrated marketing communications. Students will apply communication and creative theory to develop strategies, plans, campaigns, and tactics that support marketing goals. The course will explore major promotional mix tools including branding, advertising, sales promotion, public relations, and digital marketing.
10104106 Business Communication (3 cr.)	Focuses on the set of skills necessary to communicate professionally in sales and marketing careers. Students gain practical experience using tools such as emails, letters, positive and negative message responses, reports and presentations. The course also emphasizes the importance of both verbal and nonverbal communication, business etiquette, and team collaboration in a digital, social, mobile, and diverse global marketplace.
10104107 Content Creation (3 cr.)	Learn how to create valuable marketing content that attracts, acquires, and engages target audiences. Students will gain hands-on experience planning and creating written and visual content for websites, blogs, posts, advertisements, videos, audio/podcasts, and email marketing campaigns. Content distribution concepts will be explored including strategies to maximize exposure through owned, earned, and paid media channels.
10104108 Social Media Marketing (3 cr.)	Learn to successfully plan, deploy and establish a brand's social media presence. A mix of online research projects, case studies and class exercises will be used to enhance student knowledge. Social media platforms and analysis tools to develop social media campaigns will also be used.

Course Descriptions

10104109 Digital Media Buying (3 cr.)	Provides essential digital media buying framework on how to create an effective strategy that maximizes return on investment. Students will learn how to plan, buy, budget, and optimize digital marketing campaigns.
10104151 Marketing 1, Principles of (3 cr.)	Introduces students to the marketing function and process. Techniques for analyzing the marketing environment and understanding customers' needs and wants are explored. Students apply marketing principles to select target markets, develop positioning and create marketing programs to serve markets. Topics include product management and development, pricing, distribution and promotion strategies.
104 - Marketing & Merchandising Marketing	
10101107 Accounting, Principles of (3 cr.)	Introduces basic concepts and general principles of accounting to non-accounting students. Topics include financial statements, merchandising accounting for cash, inventory, payroll, budgeting and accounting software.
10102112 Business, Introduction to (3 cr.)	Provides an overview of the variety of activities in the world of business. It focuses on the responsibilities connected with operating a business from both organizational and managerial viewpoints. It also examines the role of government in business.
10103108 Technology Tools for Marketing, Data (2 cr.)	Focuses on the basics of Microsoft Excel by showing how to work with marketing data sources using formulas and functions for analysis. Students will gain Microsoft Excel skills to apply pivot tables, different lookup types, basic troubleshooting and data manipulation commands.
10103109 Technology Tools for Marketing, Communication (2 cr.)	Introduces students to the fundamentals of the software used to create video, images and content for mobile, social and online advertising. In addition, students will learn how to publish video and images online.
10104100 Digital Marketing (3 cr.)	Focuses on best practices for web site analysis, usability and site conversion. Students will learn how to apply basic UX (usability) concepts, site analysis data, search engine optimization (SEO), and email marketing to attract, grow and retain customers.
10104101 Marketing Analytics (3 cr.)	Focuses on how websites, social media and online campaign metrics can help businesses manage marketing programs. Students will be exposed to industry analytic tools, trends and concepts.
10104102 Marketing Strategy (3 cr.)	Students will experience hands-on marketing through a team-based agency model. Through research and analysis, they will develop marketing strategies, tactics, and content to meet the objectives of their real-world business clients. Project management skills, team collaboration and professional development will be emphasized.

Course Descriptions

10104103 Promotion Principles (3 cr.)	Introduces the concept of integrated marketing communications. Students will apply communication and creative theory to develop strategies, plans, campaigns, and tactics that support marketing goals. The course will explore major promotional mix tools including branding, advertising, sales promotion, public relations, and digital marketing.
10104106 Business Communication (3 cr.)	Focuses on the set of skills necessary to communicate professionally in sales and marketing careers. Students gain practical experience using tools such as emails, letters, positive and negative message responses, reports and presentations. The course also emphasizes the importance of both verbal and nonverbal communication, business etiquette, and team collaboration in a digital, social, mobile, and diverse global marketplace.
10104107 Content Creation (3 cr.)	Learn how to create valuable marketing content that attracts, acquires, and engages target audiences. Students will gain hands-on experience planning and creating written and visual content for websites, blogs, posts, advertisements, videos, audio/podcasts, and email marketing campaigns. Content distribution concepts will be explored including strategies to maximize exposure through owned, earned, and paid media channels.
10104108 Social Media Marketing (3 cr.)	Learn to successfully plan, deploy and establish a brand's social media presence. A mix of online research projects, case studies and class exercises will be used to enhance student knowledge. Social media platforms and analysis tools to develop social media campaigns will also be used.
10104109 Digital Media Buying (3 cr.)	Provides essential digital media buying framework on how to create an effective strategy that maximizes return on investment. Students will learn how to plan, buy, budget, and optimize digital marketing campaigns.
10104117 Sales Principles (3 cr.)	Introduces and teaches the skills used by sales and marketing professionals to succeed in their careers. It includes concepts relating to customer relationship development, creating valuable business solutions, and professional sales behaviors. Explores written, verbal, and nonverbal communication best practices. Introduces the sales process and how it can be used to promote ideas in the work place.
10104118 Professional Sales (2 cr.)	Examines the steps involved in the sales process and implements them through organized sales activities and role plays. Emphasizes sales techniques in Business to Business (B2B) and Business to Consumer (B2C) markets, sales meeting management, writing sales proposals, and creating sales collateral to assist in sales presentations.

Course Descriptions

10104119 Sales Strategy (2 cr.)	Explores contemporary sales methods and how they are used as part of a company's business development plan. The sales methods will include social selling, digital networking strategies, and relationship management using CRM and project management software. Strategic business development planning will focus on customer acquisition, sales expansion, negotiation, and sales management principles.
10104126 Marketing Internship (2 cr.)	Provides on-the-job training that allows students to apply the theories, skills and techniques studied in the program. Students work a minimum of 144 hours in a marketing-related setting. The internship includes weekly discussions related to employment topics.
10104151 Marketing 1, Principles of (3 cr.)	Introduces students to the marketing function and process. Techniques for analyzing the marketing environment and understanding customers' needs and wants are explored. Students apply marketing principles to select target markets, develop positioning and create marketing programs to serve markets. Topics include product management and development, pricing, distribution and promotion strategies.
10106199 Business Career Planning (1 cr.)	Provides students with information and tools to prepare for a Business career. Students will demonstrate professionalism and develop professional employment documents, business communications, and interview strategies.
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
10804123 Math w Business Apps (3 cr.)	This course integrates algebraic concepts, proportions, percents, simple interest, compound interest, annuities, and basic statistics with business/consumer scenarios. It also applies math concepts to the purchasing/buying and selling processes.
10809195 Economics (3 cr.)	This course is designed to give an overview of microeconomics, macroeconomics, and international economics. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues.

Course Descriptions

10809198 Intro to Psychology (3 cr.)

This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.

104 - Marketing & Merchandising Sales Specialist

10104106 Business Communication (3 cr.)

Focuses on the set of skills necessary to communicate professionally in sales and marketing careers. Students gain practical experience using tools such as emails, letters, positive and negative message responses, reports and presentations. The course also emphasizes the importance of both verbal and nonverbal communication, business etiquette, and team collaboration in a digital, social, mobile, and diverse global marketplace.

10104117 Sales Principles (3 cr.)

Introduces and teaches the skills used by sales and marketing professionals to succeed in their careers. It includes concepts relating to customer relationship development, creating valuable business solutions, and professional sales behaviors. Explores written, verbal, and nonverbal communication best practices. Introduces the sales process and how it can be used to promote ideas in the work place.

10104118 Professional Sales (2 cr.)

Examines the steps involved in the sales process and implements them through organized sales activities and role plays. Emphasizes sales techniques in Business to Business (B2B) and Business to Consumer (B2C) markets, sales meeting management, writing sales proposals, and creating sales collateral to assist in sales presentations.

10104119 Sales Strategy (2 cr.)

Explores contemporary sales methods and how they are used as part of a company's business development plan. The sales methods will include social selling, digital networking strategies, and relationship management using CRM and project management software. Strategic business development planning will focus on customer acquisition, sales expansion, negotiation, and sales management principles.

106 - Office Administrative Professional

10101107 Accounting, Principles of (3 cr.)

Introduces basic concepts and general principles of accounting to non-accounting students. Topics include financial statements, merchandising accounting for cash, inventory, payroll, budgeting and accounting software.

10103120 MS Office Suite, Introduction (2 cr.)

Provides an opportunity to gain technical skills employers are seeking, by using the features in Outlook, Word, Excel, and PowerPoint. Through hands-on course work, students will be able to integrate Word, Excel and PowerPoint.

Course Descriptions

10106101 Web Technologies (2 cr.)	Focuses on social and business web applications and components. Students will develop skills to create engaging content for the web.
10106103 Intro to Office Careers (1 cr.)	Focuses on career expectations, professional resources, and skills needed to prepare students for the Office Assistant and Administrative Professional programs.
10106109 Virtual Communication (3 cr.)	Focuses on demonstrating proficiency with a variety of computer and web-based business applications. Students will develop skills to communicate, meet, and share information professionally with others virtually or in the office.
10106113 Microsoft Outlook (2 cr.)	Introduces students to email communication, appointments, and meeting scheduling within Microsoft Outlook. In addition, students will learn and explore various customization options available within Microsoft Outlook.
10106115 Administrative Procedures (3 cr.)	Focuses on the development of fundamental office skills. Students will gain skill in general office duties, application of office technologies, and professional communication.
10106118 Effective Business Practice (3 cr.)	Focuses on business soft skills to provide students with the ability to conduct themselves in the business world with confidence.
10106123 Critical Thinking for Business (3 cr.)	Focuses on developing the ability to think independently and make decisions to complete projects. Students will develop skills to integrate multiple components of business-related experiences.
10106124 Business Projects (3 cr.)	Focuses on business-related projects in a scenario-based environment simulating current office practices.
10106125 Microsoft Office Suite, Advanced (3 cr.)	Builds on existing software knowledge by applying problem solving and critical thinking skills to a variety of projects. Students will also advance their software knowledge by learning new techniques to use in a professional business office.
10106127 Microsoft Apps (2 cr.)	Focuses on working with a variety of Microsoft Apps and how to integrate them. Students will explore software used in planning, sharing, organizing information, and meeting coordination.
10106138 Office Career Experience (2 cr.)	Focuses on the program outcomes by providing a cumulative project experience or on-the-job supervised office work experience. Students will demonstrate the skills developed throughout the program.
10106140 Meeting & Event Management Fundamentals (3 cr.)	Focuses on coordinating business meetings and planning successful business events. Students will develop the fundamentals skills of meeting and event logistics.
10106157 Administrative Management (3 cr.)	Focuses on the advanced office skills necessary to succeed in a professional business office. Students will build on existing office skills by applying problem solving and critical thinking skills.

Course Descriptions

10106178 Business Presentation Techniques (3 cr.)	Develops skills to prepare, support, and facilitate effective business presentations. Students develop skills to present themselves and design powerful in-person and virtual presentations.
10106199 Business Career Planning (1 cr.)	Provides students with information and tools to prepare for a Business career. Students will demonstrate professionalism and develop professional employment documents, business communications, and interview strategies.
10196103 Continuous Improvement Basics for Office (1 cr.)	Learn how Lean, Six Sigma and many other process improvement strategies help businesses provide exceptional customer service by delivering the products and services customers want in a timely and efficient manner.
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
10804123 Math w Business Apps (3 cr.)	This course integrates algebraic concepts, proportions, percents, simple interest, compound interest, annuities, and basic statistics with business/consumer scenarios. It also applies math concepts to the purchasing/buying and selling processes.
10809195 Economics (3 cr.)	This course is designed to give an overview of microeconomics, macroeconomics, and international economics. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues.
10809199 Psychology of Human Relations (3 cr.)	Explores the relationship between the general principles of psychology and our everyday lives. Students are given the opportunity to achieve a deepened sense of awareness of themselves and others. This understanding enables students to improve their relationships with others at work, in the family, and in society.
106 - Office Law Enforcement Administrative Professional	
10102103 Business Law 1 (3 cr.)	Introduces legal principles and standard business law concepts and their implications for business. It emphasizes contracts, sales, commercial paper, bailment, agency and real property, with references to the Uniform Commercial Code and recent consumer legislation.

Course Descriptions

10106116 Professional Business Writing (2 cr.)	Focuses on spelling, grammar, and punctuation as applied to business documents in both print and digital mediums. Students will develop skills to write professional content for specific business documents.
10106118 Effective Business Practice (3 cr.)	Focuses on business soft skills to provide students with the ability to conduct themselves in the business world with confidence.
10106178 Business Presentation Techniques (3 cr.)	Develops skills to prepare, support, and facilitate effective business presentations. Students develop skills to present themselves and design powerful in-person and virtual presentations.
10504204 Criminal Justice System (3 cr.)	Distinguish the roles of courts and law enforcement agencies; identify the purpose of law enforcement in American society; describe how professionalism and ethics relate to law enforcement; understand crime in America; explain basic aspects of criminal law; gain an understanding of sentencing of offenders as it relates to prison and jails; compare adult and juvenile justice.
106 - Office Office Assistant	
10103120 MS Office Suite, Introduction (2 cr.)	Provides an opportunity to gain technical skills employers are seeking, by using the features in Outlook, Word, Excel, and PowerPoint. Through hands-on course work, students will be able to integrate Word, Excel and PowerPoint.
10106101 Web Technologies (2 cr.)	Focuses on social and business web applications and components. Students will develop skills to create engaging content for the web.
10106103 Intro to Office Careers (1 cr.)	Focuses on career expectations, professional resources, and skills needed to prepare students for the Office Assistant and Administrative Professional programs.
10106113 Microsoft Outlook (2 cr.)	Introduces students to email communication, appointments, and meeting scheduling within Microsoft Outlook. In addition, students will learn and explore various customization options available within Microsoft Outlook.
10106115 Administrative Procedures (3 cr.)	Focuses on the development of fundamental office skills. Students will gain skill in general office duties, application of office technologies, and professional communication.
10106118 Effective Business Practice (3 cr.)	Focuses on business soft skills to provide students with the ability to conduct themselves in the business world with confidence.
10106125 Microsoft Office Suite, Advanced (3 cr.)	Builds on existing software knowledge by applying problem solving and critical thinking skills to a variety of projects. Students will also advance their software knowledge by learning new techniques to use in a professional business office.

Course Descriptions

10106138 Office Career Experience (2 cr.)	Focuses on the program outcomes by providing a cumulative project experience or on-the-job supervised office work experience. Students will demonstrate the skills developed throughout the program.
10106157 Administrative Management (3 cr.)	Focuses on the advanced office skills necessary to succeed in a professional business office. Students will build on existing office skills by applying problem solving and critical thinking skills.
10106199 Business Career Planning (1 cr.)	Provides students with information and tools to prepare for a Business career. Students will demonstrate professionalism and develop professional employment documents, business communications, and interview strategies.
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
10804123 Math w Business Apps (3 cr.)	This course integrates algebraic concepts, proportions, percents, simple interest, compound interest, annuities, and basic statistics with business/consumer scenarios. It also applies math concepts to the purchasing/buying and selling processes.

106 - Office Practical Computer Skills

10106107 Keyboarding for PC Users (1 cr.)	Introduces keying by touch. It emphasizes control of the alphabetic keys and the numeric keypad. Practice drills to improve keying skills are included.
10106132 Business Editing Brush-up (1 cr.)	Review basic grammar skills that are related to successful business writing.
10106135 Business Correspondence Brush-up (1 cr.)	Plan and write effective business correspondence, including a variety of business letters, reports, memos, meeting minutes and news releases. Resume and other employment-related correspondence will also be covered.
10106136 The Practical PC (1 cr.)	Explores the basics of computer operations, including installation of software, organization of files and folders, working with basic software, and identification of the hardware pieces that make up a standard computer system.
10106183 Practical Office Software (1 cr.)	Explore how to use Microsoft Office software in the office. Focus will be on basic features and concepts associated with the software.

Course Descriptions

10890103 Employability Strategies (1 cr.) Designed to ease the student's transition from school to the world of work. The strategies of getting a job and the interpersonal skills needed in keeping it are emphasized. Topics include the job search, employment correspondence, application for employment and job interviewing. These topics are enhanced by mock interviews, individualized job search planning and employment advising, and presentations from human resource personnel.

106 - Office Receptionist

10103120 MS Office Suite, Introduction (2 cr.) Provides an opportunity to gain technical skills employers are seeking, by using the features in Outlook, Word, Excel, and PowerPoint. Through hands-on course work, students will be able to integrate Word, Excel and PowerPoint.

10106115 Administrative Procedures (3 cr.) Focuses on the development of fundamental office skills. Students will gain skill in general office duties, application of office technologies, and professional communication.

10106118 Effective Business Practice (3 cr.) Focuses on business soft skills to provide students with the ability to conduct themselves in the business world with confidence.

106 - Office Virtual Assistant

10103120 MS Office Suite, Introduction (2 cr.) Provides an opportunity to gain technical skills employers are seeking, by using the features in Outlook, Word, Excel, and PowerPoint. Through hands-on course work, students will be able to integrate Word, Excel and PowerPoint.

10106101 Web Technologies (2 cr.) Focuses on social and business web applications and components. Students will develop skills to create engaging content for the web.

10106109 Virtual Communication (3 cr.) Focuses on demonstrating proficiency with a variety of computer and web-based business applications. Students will develop skills to communicate, meet, and share information professionally with others virtually or in the office.

10106113 Microsoft Outlook (2 cr.) Introduces students to email communication, appointments, and meeting scheduling within Microsoft Outlook. In addition, students will learn and explore various customization options available within Microsoft Outlook.

10106115 Administrative Procedures (3 cr.) Focuses on the development of fundamental office skills. Students will gain skill in general office duties, application of office technologies, and professional communication.

10106127 Microsoft Apps (2 cr.) Focuses on working with a variety of Microsoft Apps and how to integrate them. Students will explore software used in planning, sharing, organizing information, and meeting coordination.

10106140 Meeting & Event Management Fundamentals (3 cr.) Focuses on coordinating business meetings and planning successful business events. Students will develop the fundamentals skills of meeting and event logistics.

Course Descriptions

10106157 Administrative Management (3 cr.) Focuses on the advanced office skills necessary to succeed in a professional business office. Students will build on existing office skills by applying problem solving and critical thinking skills.

107 - Information Technology IT - PC Programming

10152108 Advanced Software Development (3 cr.) Explores advanced programming techniques using the Microsoft.NET environment. Focuses on using Object Oriented Programming (OOP), advanced controls, data reporting tools, deployment methods and database access methods. Project design and management methodologies will be developed throughout the class.

10152111 C# Introduction to Programming (3 cr.) Introduces students with little or no programming background to programming and logic principles that apply to traditional and Windows systems. Uses C# to apply the principles by developing simple Windows applications.

10152114 Computer Programming C++ (3 cr.) Introduces C++ programming concepts and statements including input and output of data in a console application, variables and data type considerations, if-else and switch-case programming constructs, looping constructs, creating programmer defined functions, arrays, pointers, string manipulation, data structures and sequential file processing. It also introduces Object Oriented Programming in the C++ language.

10152116 C# Intermediate Programming (3 cr.) Covers C# programming concepts and statements starting with basic class/object terminology. Investigates data types, methods and behaviors, iteration, arrays, lists and collections, Windows (GUI) programming, event programming, inheritance, file IO, exception handling and Database access methods.

10152168 Data Access for Programmers (3 cr.) Provides background in fundamental database concepts, design, documentation, implementation and distribution involving the relational database model. Students will create, query and update relational databases using Structured Query Language (SQL).

10152170 Data Administration Techniques (3 cr.) Covers the operation and management of client/server back-end relational databases. Topics include data definition language, table modification, creating views, indices, triggers, transactions, backup and recovery.

109 - Hotel and Restaurant Event Management

10101107 Accounting, Principles of (3 cr.) Introduces basic concepts and general principles of accounting to non-accounting students. Topics include financial statements, merchandising accounting for cash, inventory, payroll, budgeting and accounting software.

10102103 Business Law 1 (3 cr.) Introduces legal principles and standard business law concepts and their implications for business. It emphasizes contracts, sales, commercial paper, bailment, agency and real property, with references to the Uniform Commercial Code and recent consumer legislation.

Course Descriptions

10102157 Business Law 2 (3 cr.)	Discusses employment, business organizations, ethics, social media and internet law, and insurance.
10103120 MS Office Suite, Introduction (2 cr.)	Provides an opportunity to gain technical skills employers are seeking, by using the features in Outlook, Word, Excel, and PowerPoint. Through hands-on course work, students will be able to integrate Word, Excel and PowerPoint.
10104151 Marketing 1, Principles of (3 cr.)	Introduces students to the marketing function and process. Techniques for analyzing the marketing environment and understanding customers' needs and wants are explored. Students apply marketing principles to select target markets, develop positioning and create marketing programs to serve markets. Topics include product management and development, pricing, distribution and promotion strategies.
10106101 Web Technologies (2 cr.)	Focuses on social and business web applications and components. Students will develop skills to create engaging content for the web.
10106118 Effective Business Practice (3 cr.)	Focuses on business soft skills to provide students with the ability to conduct themselves in the business world with confidence.
10106140 Meeting & Event Management Fundamentals (3 cr.)	Focuses on coordinating business meetings and planning successful business events. Students will develop the fundamentals skills of meeting and event logistics.
10106178 Business Presentation Techniques (3 cr.)	Develops skills to prepare, support, and facilitate effective business presentations. Students develop skills to present themselves and design powerful in-person and virtual presentations.
10109102 Transportation, Registration and Housing (2 cr.)	Identify the meeting audience location and understand technological abilities to best assess the location for a meeting and the type of registration to be used. Learn to identify and make informed decisions that allow attendees a seamless meeting experience.
10109104 Meeting & Event Management, Adv. Apps (3 cr.)	Learn to create, market, plan and implement incentive programs and special events. Apply creativity to develop events with unique purposes and presentations combining elements such as site selection, decor, lighting, sound and entertainment as well as food and beverage to reflect the theme of the event.
10109106 Risk Management for Hospitality (2 cr.)	Addresses security and crisis management issues encountered in the Meeting and Event Planning industry. Students will focus on understanding the impact of these issues while developing strategies and identifying resources to support appropriate resolutions.
10109107 Partnership Development (2 cr.)	Learn how to analyze a meeting to identify sponsorship and fundraising opportunities. These partnerships build support for a meeting, increase marketing effectiveness and increase meeting profitability.

Course Descriptions

10109112 Exposition Management (2 cr.)	Provides the student with an understanding of the growing role of trade shows as a source of revenue for the sponsor as well as an opportunity for buyers and sellers to interact face-to-face in an educational environment. Students create a request for proposal, identify contractors necessary for producing the show, and learn how to effectively interact and communicate with exhibitors throughout the process.
10109127 Meeting Management Internship (3 cr.)	Provides both theoretical and hands-on experience planning, setting up, and managing a meeting or event. Emphasis is on developing and implementing proper procedures to ensure professional results. Weekly seminars emphasize career-related topics.
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
10804123 Math w Business Apps (3 cr.)	This course integrates algebraic concepts, proportions, percents, simple interest, compound interest, annuities, and basic statistics with business/consumer scenarios. It also applies math concepts to the purchasing/buying and selling processes.
10809195 Economics (3 cr.)	This course is designed to give an overview of microeconomics, macroeconomics, and international economics. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues.
10809196 Intro to Sociology (3 cr.)	Introduces students to the fundamental sociological concepts, including sociological perspectives, research methods, the significance of culture in society, and the socialization process. Other topics include deviance, the impact of groups on behavior, societal inequities, global changes, the role of social institutions, and social stratification.
10809198 Intro to Psychology (3 cr.)	This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.

Course Descriptions

109 - Hotel and Restaurant Event Planning

10101107 Accounting, Principles of (3 cr.)	Introduces basic concepts and general principles of accounting to non-accounting students. Topics include financial statements, merchandising accounting for cash, inventory, payroll, budgeting and accounting software.
10103120 MS Office Suite, Introduction (2 cr.)	Provides an opportunity to gain technical skills employers are seeking, by using the features in Outlook, Word, Excel, and PowerPoint. Through hands-on course work, students will be able to integrate Word, Excel and PowerPoint.
10106118 Effective Business Practice (3 cr.)	Focuses on business soft skills to provide students with the ability to conduct themselves in the business world with confidence.
10106140 Meeting & Event Management Fundamentals (3 cr.)	Focuses on coordinating business meetings and planning successful business events. Students will develop the fundamentals skills of meeting and event logistics.
10109106 Risk Management for Hospitality (2 cr.)	Addresses security and crisis management issues encountered in the Meeting and Event Planning industry. Students will focus on understanding the impact of these issues while developing strategies and identifying resources to support appropriate resolutions.
10109125 Hospitality Sales and Promotion (2 cr.)	Covers sales and promotion in the hospitality industry. The emphasis is on promoting hospitality entities to attract new customers, selling principles and merchandising techniques for products and services, and innovative ways to maintain the interest of existing customers.
10109126 Customer Service Management (3 cr.)	Helps students to understand, apply and manage the principles of good customer service in a variety of hospitality environments. Particular attention will be given to the various roles and responsibilities of hospitality employees as they relate to customer service.
10316118 Sanitation for Food Service Operations (1 cr.)	Focuses on the development of skills to follow sanitation and hygiene provisions in state codes. The Servsafe certification test is included.
10316142 Catering and Special Event Planning (2 cr.)	Introduces how to develop, plan and execute catering and special events to the exacting details of the customer. Emphasis is on the importance of details in planning to achieve the best possible results. Activities will encourage both creative thinking and functionality to ensure customer satisfaction and business profitability.

109 - Hotel and Restaurant Hospitality Entrepreneurship

10109105 Hospitality Concept Development (2 cr.)	Introduces the learner to the basic process and consideration for a hospitality business concept start-up. Included in this study will be concept and menu development, equipment, facility layout, and design. In addition, this course will evaluate the business idea from a financial, operational, and practical view.
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Course Descriptions

10109125 Hospitality Sales and Promotion (2 cr.)

Covers sales and promotion in the hospitality industry. The emphasis is on promoting hospitality entities to attract new customers, selling principles and merchandising techniques for products and services, and innovative ways to maintain the interest of existing customers.

10145104 Entrepreneurship, Introduction to (3 cr.)

Provides students with opportunities to investigate, understand and apply the process of choosing entrepreneurship as a career path. Explores the entrepreneurial experience by focusing on an awareness of entrepreneurship, opportunity recognition, business concept development and preliminary feasibility testing. Students gain the knowledge, skills, concepts and strategies relevant for start-up and early-stage entrepreneurs. The practical hands-on approach encourages students to immerse themselves in the entrepreneurial experience.

10316142 Catering and Special Event Planning (2 cr.)

Introduces how to develop, plan and execute catering and special events to the exacting details of the customer. Emphasis is on the importance of details in planning to achieve the best possible results. Activities will encourage both creative thinking and functionality to ensure customer satisfaction and business profitability.

109 - Hotel and Restaurant Hospitality Management

10103120 MS Office Suite, Introduction (2 cr.)

Provides an opportunity to gain technical skills employers are seeking, by using the features in Outlook, Word, Excel, and PowerPoint. Through hands-on course work, students will be able to integrate Word, Excel and PowerPoint.

10109103 Hospitality Law and Liability (3 cr.)

Introduces legal principles together with standard business law concepts and emphasizes their implications for the hospitality and tourism industry. Among the topics covered are contracts, torts and negligence, hotel/guest relationships, Americans with Disabilities Act, food service and employment laws, and consumer protection. Case studies involving the basic principles of law are used to assist in developing judgment in these areas.

10109105 Hospitality Concept Development (2 cr.)

Introduces the learner to the basic process and consideration for a hospitality business concept start-up. Included in this study will be concept and menu development, equipment, facility layout, and design. In addition, this course will evaluate the business idea from a financial, operational, and practical view.

10109109 Hospitality Industry Experience (1 cr.)

Learn through hands-on experience within the hospitality industry by establishing work-related goals, developed with a mentor, and put into practice through daily industry experience.

Course Descriptions

10109110 Guest Service Experience (1 cr.)	Provides students real-life experience in a face-to-face, customer focused position within the hospitality industry. This course will focus on active customer engagement and the demonstration of employability essentials.
10109111 Room Operations (3 cr.)	Introduces the functions of the housekeeping and front desk departments and their interdependency.
10109119 Hospitality Security (2 cr.)	Focuses on the need to provide a safe and secure environment for customers and employees. Areas of study include physical security, internal security, protection of funds, emergency management and guest room security.
10109125 Hospitality Sales and Promotion (2 cr.)	Covers sales and promotion in the hospitality industry. The emphasis is on promoting hospitality entities to attract new customers, selling principles and merchandising techniques for products and services, and innovative ways to maintain the interest of existing customers.
10109126 Customer Service Management (3 cr.)	Helps students to understand, apply and manage the principles of good customer service in a variety of hospitality environments. Particular attention will be given to the various roles and responsibilities of hospitality employees as they relate to customer service.
10109131 Tourism: A Community Approach (3 cr.)	Focuses on the opportunities and advantages of approaching tourism from a community viewpoint. Students study the economic, employment and environmental impact of tourism on the quality of life experienced by a community.
10109140 Principles of Group Sales (2 cr.)	Provides a thorough understanding of the principles, practices and importance of group sales in the hospitality and tourism industry. Comparisons and contrasts will be examined between the functions of in-house marketing departments, convention and visitor's bureaus, chambers of commerce and municipality-based entities.
10109152 Introduction to Hospitality (3 cr.)	Introduces various aspects of the hospitality industry including lodging, food service, tourism and customer service. Students evaluate potential internship and career opportunities as they explore topics including professionalism, ethics & etiquette.
10316101 Food Production, Introduction to (3 cr.)	Introduces quantity food production to the non-culinary student. Topics include preparation of a variety of menu items, equipment use, cooking methods and terminologies, recipe conversion and the essentials of timing and coordination of service.
10316118 Sanitation for Food Service Operations (1 cr.)	Focuses on the development of skills to follow sanitation and hygiene provisions in state codes. The Servsafe certification test is included.
10316120 Culinary Applications (2 cr.)	Applies the basic principles of culinary calculations involved in the purchase, preparation and use of goods related to the hospitality field.

Course Descriptions

10316123 Hospitality Supervision (3 cr.)	Introduces fundamental management techniques including leadership styles; interpersonal skills; planning, organizing and decision-making processes, as well as interviewing, hiring, training and evaluating employees.
10316141 Food, Beverage and Labor Cost Controls (3 cr.)	Covers the concepts and techniques of controlling costs with particular emphasis placed on the cost-to-sales relationship. Students calculate the cost of goods, selling price and relative percentages. They also forecast sales, conduct yield analyses and calculate break-even points.
10316142 Catering and Special Event Planning (2 cr.)	Introduces how to develop, plan and execute catering and special events to the exacting details of the customer. Emphasis is on the importance of details in planning to achieve the best possible results. Activities will encourage both creative thinking and functionality to ensure customer satisfaction and business profitability.
10531101 First Aid/CPR, Principles and Practices (1 cr.)	Presents and evaluates basic first aid skills necessary to care for the ill and injured until medical help arrives. Covers the use of an Automated External Defibrillator (AED), as well as CPR for all ages and the recognition and care of cardiac emergencies. Students receive an AHA Healthcare CPR card and a FVTC First Aid certificate upon course completion.
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
10804123 Math w Business Apps (3 cr.)	This course integrates algebraic concepts, proportions, percents, simple interest, compound interest, annuities, and basic statistics with business/consumer scenarios. It also applies math concepts to the purchasing/buying and selling processes.
10809196 Intro to Sociology (3 cr.)	Introduces students to the fundamental sociological concepts, including sociological perspectives, research methods, the significance of culture in society, and the socialization process. Other topics include deviance, the impact of groups on behavior, societal inequities, global changes, the role of social institutions, and social stratification.

Course Descriptions

10809198 Intro to Psychology (3 cr.) This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.

109 - Hotel and Restaurant Hospitality Specialist

10109111 Room Operations (3 cr.) Introduces the functions of the housekeeping and front desk departments and their interdependency.

10109126 Customer Service Management (3 cr.) Helps students to understand, apply and manage the principles of good customer service in a variety of hospitality environments. Particular attention will be given to the various roles and responsibilities of hospitality employees as they relate to customer service.

10109131 Tourism: A Community Approach (3 cr.) Focuses on the opportunities and advantages of approaching tourism from a community viewpoint. Students study the economic, employment and environmental impact of tourism on the quality of life experienced by a community.

10109152 Introduction to Hospitality (3 cr.) Introduces various aspects of the hospitality industry including lodging, food service, tourism and customer service. Students evaluate potential internship and career opportunities as they explore topics including professionalism, ethics & etiquette.

10316101 Food Production, Introduction to (3 cr.) Introduces quantity food production to the non-culinary student. Topics include preparation of a variety of menu items, equipment use, cooking methods and terminologies, recipe conversion and the essentials of timing and coordination of service.

10316118 Sanitation for Food Service Operations (1 cr.) Focuses on the development of skills to follow sanitation and hygiene provisions in state codes. The Servsafe certification test is included.

10316120 Culinary Applications (2 cr.) Applies the basic principles of culinary calculations involved in the purchase, preparation and use of goods related to the hospitality field.

10316123 Hospitality Supervision (3 cr.) Introduces fundamental management techniques including leadership styles; interpersonal skills; planning, organizing and decision-making processes, as well as interviewing, hiring, training and evaluating employees.

10316142 Catering and Special Event Planning (2 cr.) Introduces how to develop, plan and execute catering and special events to the exacting details of the customer. Emphasis is on the importance of details in planning to achieve the best possible results. Activities will encourage both creative thinking and functionality to ensure customer satisfaction and business profitability.

Course Descriptions

10531101 First Aid/CPR, Principles and Practices (1 cr.)	Presents and evaluates basic first aid skills necessary to care for the ill and injured until medical help arrives. Covers the use of an Automated External Defibrillator (AED), as well as CPR for all ages and the recognition and care of cardiac emergencies. Students receive an AHA Healthcare CPR card and a FVTC First Aid certificate upon course completion.
10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
10804123 Math w Business Apps (3 cr.)	This course integrates algebraic concepts, proportions, percents, simple interest, compound interest, annuities, and basic statistics with business/consumer scenarios. It also applies math concepts to the purchasing/buying and selling processes.
110 - Legal Studies/Paralegal	
10101107 Accounting, Principles of (3 cr.)	Introduces basic concepts and general principles of accounting to non-accounting students. Topics include financial statements, merchandising accounting for cash, inventory, payroll, budgeting and accounting software.
10102103 Business Law 1 (3 cr.)	Introduces legal principles and standard business law concepts and their implications for business. It emphasizes contracts, sales, commercial paper, bailment, agency and real property, with references to the Uniform Commercial Code and recent consumer legislation.
10102157 Business Law 2 (3 cr.)	Discusses employment, business organizations, ethics, social media and internet law, and insurance.
10103180 MS Word Introduction (1 cr.)	Presents basic features of Microsoft Word. Learn how to create, edit, and save documents; format characters, paragraphs, pages, and documents; apply special features when formatting; and create a merged document.
10103184 MS Word Intermediate (1 cr.)	Presents intermediate features of Microsoft Word. Learn how to use styles and create multilevel lists and charts, use advanced table features and editing tools, build documents from reusable content, and revise documents using markup tools.
10110100 Legal Studies & Legal Ethics, Intro to (4 cr.)	Provides students with an introduction to the legal profession, court system, legal ethics, legal terminology, research, law office management concepts and procedures, and the role of paralegals.
10110106 Family Law (3 cr.)	Familiarizes the student with basic legal concepts involved in the area of family relations. Primary emphasis is in the field of divorce. Additional topics include children in need of protection and services, termination of parental rights, adoption, guardianship, and court procedures relating to family law.

Course Descriptions

10110107 Legal Aspects/Business Organizations (3 cr.)	Focuses on the formation, operations, and dissolution of types of business organizations, and substantive and procedural law involving business organizations.
10110114 Administration of Estates (3 cr.)	An in-depth course dealing with wills, trusts, estates, and probate. Identifies techniques for fact gathering, income and death tax principles, use of trusts, probate, and administration of terms of wills.
10110115 Legal Research & Writing, Introduction (3 cr.)	Focuses on the application of legal research and writing techniques using traditional and computer-assisted resources and federal and state materials. Incorporates writing skills that cover various internal and external legal documents.
10110117 Legal Research & Writing, Advanced (3 cr.)	Builds upon existing knowledge of legal research and writing techniques using traditional and computer-assisted resources and federal and state materials. Incorporates advanced writing skills that cover various internal and external legal documents.
10110118 Law Office Management and Technology (3 cr.)	Provides students with the fundamentals of law office organization and technology. Topics include organization and utilization of support personnel, time and billing systems, budgets, case and file management, calendaring and docket control, and accounting systems in a law office. Students will demonstrate knowledge of these topics from an ethical perspective.
10110119 Legal Studies Internship (2 cr.)	Provides attorney-supervised work experience in a legal environment. Each student completes a minimum of 144 hours working as an intern. Course is designed for the student to take during the final semester of the program.
10110151 Civil Litigation Procedures (3 cr.)	Provides students with outlines of the stages of civil litigation including initial client contact, investigation, pleadings, and motions. Covers the civil litigation procedure during discovery, trial, and appeal.
10110160 Employment Law for Legal Professionals (3 cr.)	Provides students with an understanding of the analysis of federal and state laws governing employment relationships, job discrimination, sexual harassment, workplace privacy, labor standards, and human resource management.
10110168 Criminal Procedures for Legal Professionals (3 cr.)	Focus is on substantive and procedural criminal law, the role of legal professionals in both the prosecution and defense of criminal actions, with emphasis on investigations and preparation of legal documents.
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.

Course Descriptions

10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
10804123 Math w Business Apps (3 cr.)	This course integrates algebraic concepts, proportions, percents, simple interest, compound interest, annuities, and basic statistics with business/consumer scenarios. It also applies math concepts to the purchasing/buying and selling processes.
10809196 Intro to Sociology (3 cr.)	Introduces students to the fundamental sociological concepts, including sociological perspectives, research methods, the significance of culture in society, and the socialization process. Other topics include deviance, the impact of groups on behavior, societal inequities, global changes, the role of social institutions, and social stratification.
10809198 Intro to Psychology (3 cr.)	This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.

114 - Financial Banking & Financial Services

10101104 QuickBooks Accounting Online (2 cr.)	Lays the foundation for students to gain experience using QuickBooks Pro. Students practice creating a company using a chart of accounts, creating vendors and customers, demo payroll, record transactions, and generate and use financial reports. Being familiar with Windows, business experience or completion of an accounting course is helpful. Upon completion of this course, students are eligible to take the QuickBooks Certification exam.
10101145 Spreadsheets, Beginning (1 cr.)	Covers developing, constructing and printing basic business-related worksheets and reports using spreadsheet software. Students create, modify and print various charts based on worksheet data.
10101152 Spreadsheets, Intermediate (1 cr.)	Covers developing and editing business-related worksheets. Students examine various functions such as If, Round, Sum, Average and Pmt. They also use Data Tables, Goal Seek, Scenarios and Solver to assist in decision making.
10101180 Financial Accounting 1 (4 cr.)	Prepares students to analyze, record, summarize and interpret accounting information. The course focuses on business transactions, financial statements, merchandising, inventory, special journals, internal controls, receivables, plant assets and payroll.
10101190 Financial Fraud Detection, Fundamentals of (1 cr.)	Focuses on accounting information systems and accounting processes related to sales, purchasing, etc. Covers internal controls designed to mitigate and prevent financial fraud.

Course Descriptions

10102103 Business Law 1 (3 cr.)	Introduces legal principles and standard business law concepts and their implications for business. It emphasizes contracts, sales, commercial paper, bailment, agency and real property, with references to the Uniform Commercial Code and recent consumer legislation.
10103120 MS Office Suite, Introduction (2 cr.)	Provides an opportunity to gain technical skills employers are seeking, by using the features in Outlook, Word, Excel, and PowerPoint. Through hands-on course work, students will be able to integrate Word, Excel and PowerPoint.
10104117 Sales Principles (3 cr.)	Introduces and teaches the skills used by sales and marketing professionals to succeed in their careers. It includes concepts relating to customer relationship development, creating valuable business solutions, and professional sales behaviors. Explores written, verbal, and nonverbal communication best practices. Introduces the sales process and how it can be used to promote ideas in the work place.
10104151 Marketing 1, Principles of (3 cr.)	Introduces students to the marketing function and process. Techniques for analyzing the marketing environment and understanding customers' needs and wants are explored. Students apply marketing principles to select target markets, develop positioning and create marketing programs to serve markets. Topics include product management and development, pricing, distribution and promotion strategies.
10114103 Financial Statement Analysis (3 cr.)	Examines the basic skills of financial analysis to the prospective lender credit analyst.
10114104 Financial Institutions (3 cr.)	Examines a balanced view of the United States financial system. Includes an understanding of all financial institutions, financial markets and financial instruments. Introduces the operation, mechanics and structure of the financial system.
10114105 Financial Services and Products (2 cr.)	Covers financial institutions that offer a broad spectrum of products and services to government, businesses and individuals. Examines current financial products and services and gives insight into developing and promoting new products and services to meet customer needs.
10114115 Credit Procedures (3 cr.)	Covers consumer and commercial credit management. It focuses on what the seller must know and do when using credit selling to produce maximum sales with minimum losses. Topics include types of credit, investigation and evaluation of risk, sources of information, decision making, and collection policies and practices.
10114124 Money and Banking, Introduction to (3 cr.)	Provides a study of money and its creation, monetary systems, the operation of the Federal Reserve System, commercial banking systems and international monetary problems. It also examines the factors that determine the value of money and the operation of the banking system in relation to price level, employment, savings and investment, and economic activity.

Course Descriptions

10114175 Financial Planning (3 cr.)	Approaches planning from the perspective of an individual who applies specific financial concepts and principles to setting financial goals, choosing a career, budgeting and cash flow management. Topics include credit, income taxes, asset protection, investments, retirement and estate planning.
10114176 Stock and Bond Investments (3 cr.)	Provides an overview of the problems of investing; the stock, bond and mutual fund investment vehicles available; and the markets in which investments are traded.
10116155 Business Ethics (3 cr.)	Explores ethical considerations and sustainability issues across business areas such as human resources, accounting and marketing. Examines the differences between legal and ethical decision making.
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
10804123 Math w Business Apps (3 cr.)	This course integrates algebraic concepts, proportions, percents, simple interest, compound interest, annuities, and basic statistics with business/consumer scenarios. It also applies math concepts to the purchasing/buying and selling processes.
10809195 Economics (3 cr.)	This course is designed to give an overview of microeconomics, macroeconomics, and international economics. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues.
10809198 Intro to Psychology (3 cr.)	This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.
116 - Human Human Resources	
10101194 Payroll (2 cr.)	Presents payroll calculation and preparation of payroll. Topics include federal and state laws, calculation and payment of payroll taxes, completion of government forms. Proficiency with electronic calculators is recommended.

Course Descriptions

10102112 Business, Introduction to (3 cr.)	Provides an overview of the variety of activities in the world of business. It focuses on the responsibilities connected with operating a business from both organizational and managerial viewpoints. It also examines the role of government in business.
10103120 MS Office Suite, Introduction (2 cr.)	Provides an opportunity to gain technical skills employers are seeking, by using the features in Outlook, Word, Excel, and PowerPoint. Through hands-on course work, students will be able to integrate Word, Excel and PowerPoint.
10116105 Employee and Labor Relations (3 cr.)	Explores employee relations efforts in both unionized and non-union organizations.
10116123 Human Resources Internship (2 cr.)	Provides on-the-job supervised Human Resources work experience in various businesses. Each student completes a minimum of 72 hours working as an intern. Completion of a minimum of 34 program credits is highly recommended.
10116150 Employment Law (3 cr.)	Introduces employment and labor law. This course emphasizes human resource management and labor relations. It explores employment and labor and social issues in the work environment through the laws that govern the employer/union and employer/employee relationships.
10116152 Technology in Human Resources (2 cr.)	Examines current technology available to create efficiencies in human resource processes such as recruiting, record keeping, performance management and training. Students will explore an HRIS software program.
10116153 Compensation and Benefits (3 cr.)	Focuses on the compensation and benefit elements that comprise total compensation. This course covers base pay, merit pay and variable pay programs and examines such benefits as government regulation, group welfare plans, pension plans and flexible benefit plans.
10116154 Recruiting and Hiring (3 cr.)	Focuses on recruitment, selection and hiring practices. This course examines what today's workforce expects and how to efficiently use the recruitment budget. All steps of the hiring process are reviewed. This material supplements the legal aspects of the employment process.
10116155 Business Ethics (3 cr.)	Explores ethical considerations and sustainability issues across business areas such as human resources, accounting and marketing. Examines the differences between legal and ethical decision making.
10116160 Training Design and Measurement (3 cr.)	Explains the fundamentals of training and development coordination. It includes terminology, levels of learning, matching training providers with organization needs, organizing materials and environments to maximize learning, measuring completion of objectives, and communication with employees.

Course Descriptions

10116168 Principles of Budgeting for HR (3 cr.)	Explore and assess the financial information required to analyze and interpret financial documents pertinent to the Human Resource field. While an emphasis is placed on budgeting and the budgeting process, it is not intended to be an in-depth study of the accounting field.
10116193 Human Resources, Introduction to (3 cr.)	Covers human resources planning and processes. Topics include human resource development, employee selection, performance appraisals, compensation, training, labor relations, motivation, teamwork and introduces employment related laws.
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
10804123 Math w Business Apps (3 cr.)	This course integrates algebraic concepts, proportions, percents, simple interest, compound interest, annuities, and basic statistics with business/consumer scenarios. It also applies math concepts to the purchasing/buying and selling processes.
10809172 Introduction to Diversity Studies (3 cr.)	This course introduces the study of diversity from a local to a global perspective using a holistic, interdisciplinary approach that encourages exploration and prepares students to work in a diverse environment. The course introduces basic diversity concepts, examines the impact of bias and power differentials among groups, explores the use of culturally responsive communication strategies, and compares forces that shape diversity in an international context.
10809195 Economics (3 cr.)	This course is designed to give an overview of microeconomics, macroeconomics, and international economics. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues.
10809196 Intro to Sociology (3 cr.)	Introduces students to the fundamental sociological concepts, including sociological perspectives, research methods, the significance of culture in society, and the socialization process. Other topics include deviance, the impact of groups on behavior, societal inequities, global changes, the role of social institutions, and social stratification.

Course Descriptions

10809198 Intro to Psychology (3 cr.) This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.

10890100 College Success: On Course (1 cr.) On Course helps you learn a number of proven strategies for creating greater academic, professional and personal success. You will discover how to create a rich, fulfilling life by developing new beliefs and behaviors. College Success: On Course empowers you to make wise choices in your academic and personal life which leads to improved experiences and outcomes.

140 - Global Education and English Language Competency - Advanced

10861105 English American Language and Culture: Part 1 (3 cr.) During this class you will be working on the skills that promote stronger language abilities, i.e. speaking, listening, reading and writing. In addition, you will also be strengthening the skills needed to be a successful university student, i.e. note-taking, critical thinking and classroom participation. The course also provides an opportunity to explore American Culture through Multi Media (film, television, periodicals and music). We will be discussing class, race, education and gender roles in society. New students, prior to registration contact 920-735-2443 or learnenglish@fvtc.edu for an assessment to determine your proficiency in English.

10861106 English American Language and Culture: Part 2 (3 cr.) During this class you will be working on the skills that promote advanced language abilities, i.e. speaking, listening, reading and writing. In addition, you will also be strengthening the skills needed to be a successful university student, i.e. note-taking, critical thinking and classroom participation. The course also provides an opportunity to explore American Culture through Multi Media (film, television, periodicals and music). We will be discussing class, race, education and gender roles in society. New students, prior to registration contact 920-735-2443 or learnenglish@fvtc.edu for an assessment to determine your proficiency in English.

10861112 Academic English Grammar (3 cr.) Introduce high-level grammar concepts for the high level ELL students. Students will learn a sophisticated analysis of the grammatical structures of English. New students, prior to registration contact 920-735-2443 or learnenglish@fvtc.edu for an assessment to determine your proficiency in English.

Course Descriptions

10861119 American English Pronunciation (3 cr.)

Develop English pronunciation to make communication more comprehensible. Focus on vowel clarification, consonant reproduction, intonation, stress, blends, and reductions. In addition, students have the opportunity to acquire new vocabulary, practice presentation skills, and present monologues and dialogue. New students, prior to registration contact 920-735-2443 or learnenglish@fvtc.edu for an assessment to determine your proficiency in English.

10861137 Academic English Writing (3 cr.)

For those who want to learn English as a foreign language students will develop the tools needed to write academic essays in many rhetorical styles such as comparing, contrasting, describing causes and effects, and analyzing and supporting arguments. Students will also develop and apply strategies for taking an essay exam. In addition, the course introduces how to incorporate paraphrases and quotations from other writers. Finally, students will complete a library research paper. New students, prior to registration contact 920-735-2443 or learnenglish@fvtc.edu for an assessment to determine your proficiency in English.

140 - Global Education and Global Studies

10141166 Intercultural Relations (3 cr.)

Prepare for today's increasingly global and diverse workplace by developing your intercultural competence. Explore the impact of culture on work behavior and professional relations, evaluate workplace cultural scenarios, and build a practical set of tools to effectively and appropriately interact across cultures in order to excel in today's business environment.

140 - Global Education and Spanish

10802102 Spanish 3 (3 cr.)

In this continuation of Spanish 2, students develop additional communicative and written skills in real-life situations and gain a better understanding of the Spanish-speaking cultures of the world in relationship to their own.

10802103 Spanish 4 (3 cr.)

As a continuation of Spanish 3, students will continue to increase vocabulary, refine communicative skills, and further study cultural topics. Principles of grammar are systematically reviewed focusing on the use of the present, past and future tenses.

10802107 Spanish Immersion (3 cr.)

Travel to another country on a two-week Spanish language and culture immersion program. Study Spanish and practice your language skills by interacting with local community members and participating in high impact cultural excursions, visits, and activities. Make the world your classroom and gain unique cultural insights, understanding, and experience!

Course Descriptions

10802171 Spanish 1 (4 cr.)

For students beginning the study of Spanish. Emphasizes development of basic communicative skills through practice in listening, speaking, reading and writing. Stresses vocabulary and grammar to enhance students' ability to speak and write in Spanish. Study of customs and values provides an increased awareness of Spanish speaking cultures. On completion students are expected to participate in uncomplicated conversations on everyday topics.

10802172 Spanish 2 (4 cr.)

¡Bienvenidos! Welcome! This communicative language class is designed for students who have completed one semester of college Spanish. Emphasis is placed on the continued development of more complex communicative skills through practice in listening, speaking, reading and writing. By the end of Spanish 2, you will acquire the listening, speaking, reading and writing skills necessary to handle simple everyday survival tasks in Spanish. You will also have a better understanding of and appreciation for people and cultures other than your own and an increased awareness of Spanish-speaking countries in the world.

141 - Global Language and Intercultural Foundations

10140100 International Professional Field Studies (3 cr.)

Provides students with an opportunity to study/work in their program area in a foreign country. They learn the fundamentals of the language spoken in the country they are visiting as well as gain an understanding of the values and behaviors of a different society and workplace.

10141166 Intercultural Relations (3 cr.)

Prepare for today's increasingly global and diverse workplace by developing your intercultural competence. Explore the impact of culture on work behavior and professional relations, evaluate workplace cultural scenarios, and build a practical set of tools to effectively and appropriately interact across cultures in order to excel in today's business environment.

145 - Small Entrepreneurship and Small Business Management

10101104 QuickBooks Accounting Online (2 cr.)

Lays the foundation for students to gain experience using QuickBooks Pro. Students practice creating a company using a chart of accounts, creating vendors and customers, demo payroll, record transactions, and generate and use financial reports. Being familiar with Windows, business experience or completion of an accounting course is helpful. Upon completion of this course, students are eligible to take the QuickBooks Certification exam.

10101180 Financial Accounting 1 (4 cr.)

Prepares students to analyze, record, summarize and interpret accounting information. The course focuses on business transactions, financial statements, merchandising, inventory, special journals, internal controls, receivables, plant assets and payroll.

Course Descriptions

10104151 Marketing 1, Principles of (3 cr.)	Introduces students to the marketing function and process. Techniques for analyzing the marketing environment and understanding customers' needs and wants are explored. Students apply marketing principles to select target markets, develop positioning and create marketing programs to serve markets. Topics include product management and development, pricing, distribution and promotion strategies.
10145104 Entrepreneurship, Introduction to (3 cr.)	Provides students with opportunities to investigate, understand and apply the process of choosing entrepreneurship as a career path. Explores the entrepreneurial experience by focusing on an awareness of entrepreneurship, opportunity recognition, business concept development and preliminary feasibility testing. Students gain the knowledge, skills, concepts and strategies relevant for start-up and early-stage entrepreneurs. The practical hands-on approach encourages students to immerse themselves in the entrepreneurial experience.
10145107 Building Your Business Model (2 cr.)	Evaluating and modeling potential new business ventures is the focus of this course. Students will explore and map how a business intends to make money through the four main areas of a business: customers, offer, infrastructure, and financial viability. Through a hands-on, experiential approach students gain a better understanding of how to transform a start-up into a repeatable and scalable business venture.
10145116 Financial Intelligence for Entrepreneurs (3 cr.)	Targets prospective and existing entrepreneurs who are not financial managers. Its objective is to help entrepreneurs understand the fundamentals of financial management and analysis that will enable them to better manage the financial resources of their business.
145 - Small Small Business Entrepreneurship	
10101104 QuickBooks Accounting Online (2 cr.)	Lays the foundation for students to gain experience using QuickBooks Pro. Students practice creating a company using a chart of accounts, creating vendors and customers, demo payroll, record transactions, and generate and use financial reports. Being familiar with Windows, business experience or completion of an accounting course is helpful. Upon completion of this course, students are eligible to take the QuickBooks Certification exam.
10101180 Financial Accounting 1 (4 cr.)	Prepares students to analyze, record, summarize and interpret accounting information. The course focuses on business transactions, financial statements, merchandising, inventory, special journals, internal controls, receivables, plant assets and payroll.
10101194 Payroll (2 cr.)	Presents payroll calculation and preparation of payroll. Topics include federal and state laws, calculation and payment of payroll taxes, completion of government forms. Proficiency with electronic calculators is recommended.

Course Descriptions

10102103 Business Law 1 (3 cr.)	Introduces legal principles and standard business law concepts and their implications for business. It emphasizes contracts, sales, commercial paper, bailment, agency and real property, with references to the Uniform Commercial Code and recent consumer legislation.
10103120 MS Office Suite, Introduction (2 cr.)	Provides an opportunity to gain technical skills employers are seeking, by using the features in Outlook, Word, Excel, and PowerPoint. Through hands-on course work, students will be able to integrate Word, Excel and PowerPoint.
10104117 Sales Principles (3 cr.)	Introduces and teaches the skills used by sales and marketing professionals to succeed in their careers. It includes concepts relating to customer relationship development, creating valuable business solutions, and professional sales behaviors. Explores written, verbal, and nonverbal communication best practices. Introduces the sales process and how it can be used to promote ideas in the work place.
10104151 Marketing 1, Principles of (3 cr.)	Introduces students to the marketing function and process. Techniques for analyzing the marketing environment and understanding customers' needs and wants are explored. Students apply marketing principles to select target markets, develop positioning and create marketing programs to serve markets. Topics include product management and development, pricing, distribution and promotion strategies.
10116193 Human Resources, Introduction to (3 cr.)	Covers human resources planning and processes. Topics include human resource development, employee selection, performance appraisals, compensation, training, labor relations, motivation, teamwork and introduces employment related laws.
10145104 Entrepreneurship, Introduction to (3 cr.)	Provides students with opportunities to investigate, understand and apply the process of choosing entrepreneurship as a career path. Explores the entrepreneurial experience by focusing on an awareness of entrepreneurship, opportunity recognition, business concept development and preliminary feasibility testing. Students gain the knowledge, skills, concepts and strategies relevant for start-up and early-stage entrepreneurs. The practical hands-on approach encourages students to immerse themselves in the entrepreneurial experience.
10145105 Small Business Management (3 cr.)	Focuses on the knowledge and insights needed to lead and manage a small business including managing small business operations, building a team, choosing a location, risk management, product development & supply chain management, financial forecasting, and growth strategies. The course is designed for those who may eventually have their own business or who desire to upgrade their skills in their present business.

Course Descriptions

10145107 Building Your Business Model (2 cr.)	Evaluating and modeling potential new business ventures is the focus of this course. Students will explore and map how a business intends to make money through the four main areas of a business: customers, offer, infrastructure, and financial viability. Through a hands-on, experiential approach students gain a better understanding of how to transform a start-up into a repeatable and scalable business venture.
10145108 Business Start-up & Launch Experience (3 cr.)	Create and launch a business start-up as a capstone to your entrepreneurship studies. In the Business Start-up & Launch Experience course the student will work one-on-one with the Instructor and a local business mentor to finalize their business model and open a revenue producing venture. This course is an alternate to the Business Management Internship course.
10145109 Small Business Mentorship (1 cr.)	Engages entrepreneurial students one-on-one with a small business owner to learn the process of entrepreneurship and experience small business ownership. This supervised mentorship exposes students to real-world small business situations related to their passion, and helps them develop the knowledge and confidence to be a successful future small business owner.
10145115 Entrepreneurial Thinking (3 cr.)	Engages participants in fundamental aspects of an entrepreneurial mindset as an essential life skill. Course draws upon concepts of entrepreneurial thought/process, and features real-world unlikely entrepreneurs who overcame challenges by embracing an entrepreneurial mindset. Experiential learning is obtained through identifying problems, finding solutions, and making connections beyond the classroom.
10145116 Financial Intelligence for Entrepreneurs (3 cr.)	Targets prospective and existing entrepreneurs who are not financial managers. Its objective is to help entrepreneurs understand the fundamentals of financial management and analysis that will enable them to better manage the financial resources of their business.
10196191 Supervision (3 cr.)	Uses a practical approach to training people in the basics of supervision and management. This course emphasizes the application of theory and covers management functions, the skills needed to perform those functions, the history of management, contemporary management trends, ethics, communication and total quality management.
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.

Course Descriptions

10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
10804123 Math w Business Apps (3 cr.)	This course integrates algebraic concepts, proportions, percents, simple interest, compound interest, annuities, and basic statistics with business/consumer scenarios. It also applies math concepts to the purchasing/buying and selling processes.
10809195 Economics (3 cr.)	This course is designed to give an overview of microeconomics, macroeconomics, and international economics. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues.
10809198 Intro to Psychology (3 cr.)	This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.
145 - Small Small Business Success 1	
10101104 QuickBooks Accounting Online (2 cr.)	Lays the foundation for students to gain experience using QuickBooks Pro. Students practice creating a company using a chart of accounts, creating vendors and customers, demo payroll, record transactions, and generate and use financial reports. Being familiar with Windows, business experience or completion of an accounting course is helpful. Upon completion of this course, students are eligible to take the QuickBooks Certification exam.
10145104 Entrepreneurship, Introduction to (3 cr.)	Provides students with opportunities to investigate, understand and apply the process of choosing entrepreneurship as a career path. Explores the entrepreneurial experience by focusing on an awareness of entrepreneurship, opportunity recognition, business concept development and preliminary feasibility testing. Students gain the knowledge, skills, concepts and strategies relevant for start-up and early-stage entrepreneurs. The practical hands-on approach encourages students to immerse themselves in the entrepreneurial experience.

Course Descriptions

10145107 Building Your Business Model (2 cr.)

Evaluating and modeling potential new business ventures is the focus of this course. Students will explore and map how a business intends to make money through the four main areas of a business: customers, offer, infrastructure, and financial viability. Through a hands-on, experiential approach students gain a better understanding of how to transform a start-up into a repeatable and scalable business venture.

145 - Small Small Business Success 2

10145108 Business Start-up & Launch Experience (3 cr.)

Create and launch a business start-up as a capstone to your entrepreneurship studies. In the Business Start-up & Launch Experience course the student will work one-on-one with the Instructor and a local business mentor to finalize their business model and open a revenue producing venture. This course is an alternate to the Business Management Internship course.

10145116 Financial Intelligence for Entrepreneurs (3 cr.)

Targets prospective and existing entrepreneurs who are not financial managers. Its objective is to help entrepreneurs understand the fundamentals of financial management and analysis that will enable them to better manage the financial resources of their business.

150 - IT - Networking & System IT - Infrastructure

10107184 Computing Essentials (2 cr.)

Provides students with a foundation in information technology and the use of information systems in today's business environment. Students explore fundamental computer concepts and terminology of the World Wide Web, e-mail, emerging technologies, hardware and software components and devices, programming languages, network basics, operating systems, and ethics.

10150162 Network Essentials (2 cr.)

Provides an introduction to networking theory and technologies, including the basics of communication, common protocols, the OSI model, network topologies, local network media, network devices, network security and networking tools. Includes more in-depth study of the components of TCP/IP, Ethernet, and wireless networks. Involves considerable time developing troubleshooting skills.

10890100 College Success: On Course (1 cr.)

On Course helps you learn a number of proven strategies for creating greater academic, professional and personal success. You will discover how to create a rich, fulfilling life by developing new beliefs and behaviors. College Success: On Course empowers you to make wise choices in your academic and personal life which leads to improved experiences and outcomes.

150 - IT - Networking & System IT - Network Specialist

Course Descriptions

10107110 IT Career Experience (2 cr.)	Examines and identifies job-seeking, job-keeping and interviewing techniques, strategies for identifying and meeting external and internal customer needs as well as good listening skills and techniques for dealing with difficult customers. Also covers time management, team dynamics, continual improvement processes and global business practices.
10150104 Virtualization Infrastructure (3 cr.)	Covers the infrastructure components related to virtual environments, including storage, enterprise systems, virtual networks, and cloud components.
10150111 Scripting with Python (3 cr.)	Provides a gentle introduction to scripting with the Python language for students without prior scripting or programming experience. The course will cover basics of the language, including data types, flow control, regular expressions, input/output and object oriented programming. Students will learn how to use Python to create scripts that manipulate data, automate system tasks, and automate information security.
10150116 Network Infrastructure 1 (3 cr.)	Covers networking topics including the OSI model, local area and wide area networking. Also focuses on assigning network addresses and configuring network devices including Cisco routers and switches. Includes considerable hands-on learning activities and helps prepare learner for the Cisco CCNA exam.
10150122 Network Infrastructure 2 (3 cr.)	Covers advanced networking topics including how routing tables are created, configuring static routes, implementing a classless IP addressing scheme, and configuring RIPv1, RIPv2, single area OSPF, and EIGRP operations in a small routed network. Includes considerable hands-on learning activities and helps prepare learner for the Cisco CCNA exam.
10150125 Network Infrastructure 3 (3 cr.)	Covers wide area network (WAN) technologies, dynamic routing and quality of service (QoS) mechanisms used for secure remote access along with the introduction of automation concepts that support the digitalization of networks. Students gain skills to configure and troubleshoot enterprise networks and learn to identify and protect against cybersecurity threats. They are introduced to network management tools and VoIP technologies.
10150126 Infrastructure as a Service (IaaS cr.) (3 cr.)	Covers the fundamentals of building IT infrastructure utilizing cloud-based solutions. The course is designed to teach solutions architects how to optimize the use of the cloud by understanding how these services fit into cloud-based solutions by automating tasks along with other business continuity considerations.

Course Descriptions

- 10150127 IT Project Management (2 cr.)** Examines the organization, planning and controlling of projects; also provides practical knowledge on managing project scope, schedule and resources. Topics include project life cycle, work breakdown structure and Gantt charts, network diagrams, scheduling techniques and resource allocation decisions. Concepts are applied through team projects and tutorials using project management software.
- 10150144 Ethical Hacking (3 cr.)** Introduces the techniques hackers use to discover vulnerabilities. Students will learn ways to tighten the network security to protect the exposed data from the discovered vulnerabilities. Focus is on penetration-testing tools and techniques that security testers and ethical hackers use to protect computer networks.
- 10150146 Wireless Networking (2 cr.)** Covers how wireless devices connect to networks, wireless device configurations, standards and security. Wireless networking is one of the fastest growing areas of technology available today. Considerable hands-on learning is included.
- 10150155 Linux Essentials - Just Enough Linux (1 cr.)** Covers Basic Linux topics including operating system basics, file management, graphic user interfaces and the command line interface.
- 10150156 Windows Server (3 cr.)** Covers Microsoft Windows Server administration including server hardware and software, Active Directory, file resources, printers, disk resources, Web resources, DNS and DHCP. Monitoring and troubleshooting server resources are also examined. Extensive hands-on activities are included.
- 10150160 Network Security (3 cr.)** Introduces students to intrusion detection tools, network security design, various types of network firewalls, and the basics of VPN configuration. A solid understanding of LAN/WAN fundamentals is required for this course.
- 10150161 Information Assurance (2 cr.)** Examines the basics of information security, including access control and organizational security policies. This course will include the process of securing user workstations, laptops and mobile devices.
- 10150162 Network Essentials (2 cr.)** Provides an introduction to networking theory and technologies, including the basics of communication, common protocols, the OSI model, network topologies, local network media, network devices, network security and networking tools. Includes more in-depth study of the components of TCP/IP, Ethernet, and wireless networks. Involves considerable time developing troubleshooting skills.
- 10150163 Network Specialist Capstone (2 cr.)** Provides students in this final-semester course the ability to integrate and apply the skills learned throughout their study in the Network Specialist Degree program to build and manage a network environment based on real-world scenarios. Emphasis will be placed on hands-on problem identification and solution implementation.

Course Descriptions

10154110 Enterprise Client (3 cr.)	Introduces students to the skills needed to support client PC Operating Systems. Through significant hands-on activities, learn how to configure, secure, utilize and troubleshoot client operating systems.
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
10804133 Math & Logic (3 cr.)	Students will apply problem solving techniques from discrete mathematics. Topics include symbolic logic, sets, algebra and base number systems.
10809166 Intro to Ethics: Theory & App (3 cr.)	This course provides a basic understanding of the theoretical foundations of ethical thought. Diverse ethical perspectives will be used to analyze and compare relevant issues. Students will critically evaluate individual, social and professional standards of behavior, and apply a systematic decision-making process to these situations.
10809199 Psychology of Human Relations (3 cr.)	Explores the relationship between the general principles of psychology and our everyday lives. Students are given the opportunity to achieve a deepened sense of awareness of themselves and others. This understanding enables students to improve their relationships with others at work, in the family, and in society.
10890100 College Success: On Course (1 cr.)	On Course helps you learn a number of proven strategies for creating greater academic, professional and personal success. You will discover how to create a rich, fulfilling life by developing new beliefs and behaviors. College Success: On Course empowers you to make wise choices in your academic and personal life which leads to improved experiences and outcomes.
150 - IT - Networking & System IT - Network Systems Administration	
10107110 IT Career Experience (2 cr.)	Examines and identifies job-seeking, job-keeping and interviewing techniques, strategies for identifying and meeting external and internal customer needs as well as good listening skills and techniques for dealing with difficult customers. Also covers time management, team dynamics, continual improvement processes and global business practices.

Course Descriptions

10150104 Virtualization Infrastructure (3 cr.)	Covers the infrastructure components related to virtual environments, including storage, enterprise systems, virtual networks, and cloud components.
10150105 Virtualization Technologies (3 cr.)	Introduces virtualization technologies including VMware, Citrix and Microsoft Hyper-V. Hands-on lab activities will be used to install and configure each virtualized environment.
10150116 Network Infrastructure 1 (3 cr.)	Covers networking topics including the OSI model, local area and wide area networking. Also focuses on assigning network addresses and configuring network devices including Cisco routers and switches. Includes considerable hands-on learning activities and helps prepare learner for the Cisco CCNA exam.
10150127 IT Project Management (2 cr.)	Examines the organization, planning and controlling of projects; also provides practical knowledge on managing project scope, schedule and resources. Topics include project life cycle, work breakdown structure and Gantt charts, network diagrams, scheduling techniques and resource allocation decisions. Concepts are applied through team projects and tutorials using project management software.
10150141 Operating Systems Security (2 cr.)	Covers the basics of securing Microsoft Windows workstations and servers. Students start by identifying the risks and vulnerabilities associated with Windows and then utilize a variety of tools and techniques to decrease risks arising from these vulnerabilities. Includes considerable hands-on learning activities implementing operating system hardening, application security and incident management.
10150144 Ethical Hacking (3 cr.)	Introduces the techniques hackers use to discover vulnerabilities. Students will learn ways to tighten the network security to protect the exposed data from the discovered vulnerabilities. Focus is on penetration-testing tools and techniques that security testers and ethical hackers use to protect computer networks.
10150147 Linux (2 cr.)	Covers introductory Linux topics including operating system basics, system installation, file system management, file system administration and basic commands. Considerable hands-on learning is included.
10150148 Linux Administration (3 cr.)	Covers advanced Linux topics including scripting in the BASH shell, system initialization, working with X Windows, managing Linux processes, system administration tasks, system backup, software installation, troubleshooting, system performance, network configuration and security. Considerable hands-on learning is included.
10150155 Linux Essentials - Just Enough Linux (1 cr.)	Covers Basic Linux topics including operating system basics, file management, graphic user interfaces and the command line interface.

Course Descriptions

10150156 Windows Server (3 cr.)	Covers Microsoft Windows Server administration including server hardware and software, Active Directory, file resources, printers, disk resources, Web resources, DNS and DHCP. Monitoring and troubleshooting server resources are also examined. Extensive hands-on activities are included.
10150159 Server Applications (3 cr.)	Covers advanced theories and practices including designing, maintaining, and supporting an environment using Active Directory, Group Policy, File Security, End-point management, SharePoint, Mobile Device Management (MDM), Certificate Services, and Microsoft Exchange. Extensive hands-on activities are included demonstrating standalone technologies and integration of applications within an environment.
10150161 Information Assurance (2 cr.)	Examines the basics of information security, including access control and organizational security policies. This course will include the process of securing user workstations, laptops and mobile devices.
10150162 Network Essentials (2 cr.)	Provides an introduction to networking theory and technologies, including the basics of communication, common protocols, the OSI model, network topologies, local network media, network devices, network security and networking tools. Includes more in-depth study of the components of TCP/IP, Ethernet, and wireless networks. Involves considerable time developing troubleshooting skills.
10150164 System Administration Capstone (2 cr.)	This practicum allows students to demonstrate their System Administration proficiencies by creating a personalized environment based on a set of user and business requirements.
10154110 Enterprise Client (3 cr.)	Introduces students to the skills needed to support client PC Operating Systems. Through significant hands-on activities, learn how to configure, secure, utilize and troubleshoot client operating systems.
10154111 Device Repair and Maintenance (3 cr.)	Covers configuring, maintaining, upgrading and repairing Intel-based computers and exploring functions and interrelations between components. The course examines system configuration, component care, system improvement, troubleshooting and failure identification.
10154114 Infrastructure Automation (3 cr.)	Introduces students to the fundamental skills needed to manage and automate IT Infrastructures. Students will learn the basics of scripting and command line environments using Windows PowerShell and other tools aiding system administrators in automating IT infrastructure.

Course Descriptions

10801195 Written Communication (3 cr.) Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.

10801196 Oral/Interpersonal Comm (3 cr.) Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.

10804133 Math & Logic (3 cr.) Students will apply problem solving techniques from discrete mathematics. Topics include symbolic logic, sets, algebra and base number systems.

10809166 Intro to Ethics: Theory & App (3 cr.) This course provides a basic understanding of the theoretical foundations of ethical thought. Diverse ethical perspectives will be used to analyze and compare relevant issues. Students will critically evaluate individual, social and professional standards of behavior, and apply a systematic decision-making process to these situations.

10809199 Psychology of Human Relations (3 cr.) Explores the relationship between the general principles of psychology and our everyday lives. Students are given the opportunity to achieve a deepened sense of awareness of themselves and others. This understanding enables students to improve their relationships with others at work, in the family, and in society.

10890100 College Success: On Course (1 cr.) On Course helps you learn a number of proven strategies for creating greater academic, professional and personal success. You will discover how to create a rich, fulfilling life by developing new beliefs and behaviors. College Success: On Course empowers you to make wise choices in your academic and personal life which leads to improved experiences and outcomes.

150 - IT - Networking & System Virtualization and Network Hardware

10150105 Virtualization Technologies (3 cr.) Introduces virtualization technologies including VMware, Citrix and Microsoft Hyper-V. Hands-on lab activities will be used to install and configure each virtualized environment.

10150116 Network Infrastructure 1 (3 cr.) Covers networking topics including the OSI model, local area and wide area networking. Also focuses on assigning network addresses and configuring network devices including Cisco routers and switches. Includes considerable hands-on learning activities and helps prepare learner for the Cisco CCNA exam.

Course Descriptions

10150122 Network Infrastructure 2 (3 cr.) Covers advanced networking topics including how routing tables are created, configuring static routes, implementing a classless IP addressing scheme, and configuring RIPv1, RIPv2, single area OSPF, and EIGRP operations in a small routed network. Includes considerable hands-on learning activities and helps prepare learner for the Cisco CCNA exam.

151 - IT - IT - Cybersecurity Specialist

10107110 IT Career Experience (2 cr.) Examines and identifies job-seeking, job-keeping and interviewing techniques, strategies for identifying and meeting external and internal customer needs as well as good listening skills and techniques for dealing with difficult customers. Also covers time management, team dynamics, continual improvement processes and global business practices.

10150111 Scripting with Python (3 cr.) Provides a gentle introduction to scripting with the Python language for students without prior scripting or programming experience. The course will cover basics of the language, including data types, flow control, regular expressions, input/output and object oriented programming. Students will learn how to use Python to create scripts that manipulate data, automate system tasks, and automate information security.

10150116 Network Infrastructure 1 (3 cr.) Covers networking topics including the OSI model, local area and wide area networking. Also focuses on assigning network addresses and configuring network devices including Cisco routers and switches. Includes considerable hands-on learning activities and helps prepare learner for the Cisco CCNA exam.

10150141 Operating Systems Security (2 cr.) Covers the basics of securing Microsoft Windows workstations and servers. Students start by identifying the risks and vulnerabilities associated with Windows and then utilize a variety of tools and techniques to decrease risks arising from these vulnerabilities. Includes considerable hands-on learning activities implementing operating system hardening, application security and incident management.

10150144 Ethical Hacking (3 cr.) Introduces the techniques hackers use to discover vulnerabilities. Students will learn ways to tighten the network security to protect the exposed data from the discovered vulnerabilities. Focus is on penetration-testing tools and techniques that security testers and ethical hackers use to protect computer networks.

10150147 Linux (2 cr.) Covers introductory Linux topics including operating system basics, system installation, file system management, file system administration and basic commands. Considerable hands-on learning is included.

Course Descriptions

10150155 Linux Essentials - Just Enough Linux (1 cr.)	Covers Basic Linux topics including operating system basics, file management, graphic user interfaces and the command line interface.
10150156 Windows Server (3 cr.)	Covers Microsoft Windows Server administration including server hardware and software, Active Directory, file resources, printers, disk resources, Web resources, DNS and DHCP. Monitoring and troubleshooting server resources are also examined. Extensive hands-on activities are included.
10150159 Server Applications (3 cr.)	Covers advanced theories and practices including designing, maintaining, and supporting an environment using Active Directory, Group Policy, File Security, End-point management, SharePoint, Mobile Device Management (MDM), Certificate Services, and Microsoft Exchange. Extensive hands-on activities are included demonstrating standalone technologies and integration of applications within an environment.
10150160 Network Security (3 cr.)	Introduces students to intrusion detection tools, network security design, various types of network firewalls, and the basics of VPN configuration. A solid understanding of LAN/WAN fundamentals is required for this course.
10150161 Information Assurance (2 cr.)	Examines the basics of information security, including access control and organizational security policies. This course will include the process of securing user workstations, laptops and mobile devices.
10150162 Network Essentials (2 cr.)	Provides an introduction to networking theory and technologies, including the basics of communication, common protocols, the OSI model, network topologies, local network media, network devices, network security and networking tools. Includes more in-depth study of the components of TCP/IP, Ethernet, and wireless networks. Involves considerable time developing troubleshooting skills.
10150168 Security Monitoring and Operations (3 cr.)	Examine the systems put in place to analyze threats and detect anomalies that could indicate a security incident. The challenge companies face is timely detection when they are victimized by an attack. Students will become familiar with policies, procedures, and continuous monitoring programs that can be utilized to protect an organization.
10151101 Risk and Incident Management (3 cr.)	Examines standards-based, proven methodologies for assessing and managing risk. Selecting and implementing security controls that ensure compliance with applicable laws, regulations, policies and directives. Upon completion of a risk assessment, students will learn the phases of cybersecurity incident response in a way that limits damages, reduces recovery time and manages the overall cost of an incident.

Course Descriptions

10151102 Cybersecurity Capstone (3 cr.)	Evaluates skills and knowledge gained throughout the cybersecurity program. Students will identify security strategies, implement secure infrastructures, conduct security testing, analyze security data, mitigate risk and develop security documentation.
10154110 Enterprise Client (3 cr.)	Introduces students to the skills needed to support client PC Operating Systems. Through significant hands-on activities, learn how to configure, secure, utilize and troubleshoot client operating systems.
10504176 CCI: Computer Crime Investigation (2 cr.)	Provides students with the skills, knowledge and ability to conduct computer crime investigations. Students will learn investigative protocols that can be applied to various types of computer crimes, focusing on the collection of evidence to initiate a criminal prosecution.
10504179 CCI: Basic Data Recovery (2 cr.)	Provides students with a basic understanding of how forensic evidence is recovered from a computer or similar device. Students will learn the necessary steps involved in preserving, authenticating, and analyzing data stored on computing devices, while maintaining the integrity of evidence found on these devices.
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
10804133 Math & Logic (3 cr.)	Students will apply problem solving techniques from discrete mathematics. Topics include symbolic logic, sets, algebra and base number systems.
10809166 Intro to Ethics: Theory & App (3 cr.)	This course provides a basic understanding of the theoretical foundations of ethical thought. Diverse ethical perspectives will be used to analyze and compare relevant issues. Students will critically evaluate individual, social and professional standards of behavior, and apply a systematic decision-making process to these situations.
10809199 Psychology of Human Relations (3 cr.)	Explores the relationship between the general principles of psychology and our everyday lives. Students are given the opportunity to achieve a deepened sense of awareness of themselves and others. This understanding enables students to improve their relationships with others at work, in the family, and in society.

Course Descriptions

10890100 College Success: On Course (1 cr.) On Course helps you learn a number of proven strategies for creating greater academic, professional and personal success. You will discover how to create a rich, fulfilling life by developing new beliefs and behaviors. College Success: On Course empowers you to make wise choices in your academic and personal life which leads to improved experiences and outcomes.

151 - IT - IT - Information Systems Security Specialist

10107110 IT Career Experience (2 cr.) Examines and identifies job-seeking, job-keeping and interviewing techniques, strategies for identifying and meeting external and internal customer needs as well as good listening skills and techniques for dealing with difficult customers. Also covers time management, team dynamics, continual improvement processes and global business practices.

10150111 Scripting with Python (3 cr.) Provides a gentle introduction to scripting with the Python language for students without prior scripting or programming experience. The course will cover basics of the language, including data types, flow control, regular expressions, input/output and object oriented programming. Students will learn how to use Python to create scripts that manipulate data, automate system tasks, and automate information security.

10150116 Network Infrastructure 1 (3 cr.) Covers networking topics including the OSI model, local area and wide area networking. Also focuses on assigning network addresses and configuring network devices including Cisco routers and switches. Includes considerable hands-on learning activities and helps prepare learner for the Cisco CCNA exam.

10150141 Operating Systems Security (2 cr.) Covers the basics of securing Microsoft Windows workstations and servers. Students start by identifying the risks and vulnerabilities associated with Windows and then utilize a variety of tools and techniques to decrease risks arising from these vulnerabilities. Includes considerable hands-on learning activities implementing operating system hardening, application security and incident management.

10150144 Ethical Hacking (3 cr.) Introduces the techniques hackers use to discover vulnerabilities. Students will learn ways to tighten the network security to protect the exposed data from the discovered vulnerabilities. Focus is on penetration-testing tools and techniques that security testers and ethical hackers use to protect computer networks.

10150147 Linux (2 cr.) Covers introductory Linux topics including operating system basics, system installation, file system management, file system administration and basic commands. Considerable hands-on learning is included.

Course Descriptions

10150155 Linux Essentials - Just Enough Linux (1 cr.)	Covers Basic Linux topics including operating system basics, file management, graphic user interfaces and the command line interface.
10150156 Windows Server (3 cr.)	Covers Microsoft Windows Server administration including server hardware and software, Active Directory, file resources, printers, disk resources, Web resources, DNS and DHCP. Monitoring and troubleshooting server resources are also examined. Extensive hands-on activities are included.
10150159 Server Applications (3 cr.)	Covers advanced theories and practices including designing, maintaining, and supporting an environment using Active Directory, Group Policy, File Security, End-point management, SharePoint, Mobile Device Management (MDM), Certificate Services, and Microsoft Exchange. Extensive hands-on activities are included demonstrating standalone technologies and integration of applications within an environment.
10150160 Network Security (3 cr.)	Introduces students to intrusion detection tools, network security design, various types of network firewalls, and the basics of VPN configuration. A solid understanding of LAN/WAN fundamentals is required for this course.
10150161 Information Assurance (2 cr.)	Examines the basics of information security, including access control and organizational security policies. This course will include the process of securing user workstations, laptops and mobile devices.
10150162 Network Essentials (2 cr.)	Provides an introduction to networking theory and technologies, including the basics of communication, common protocols, the OSI model, network topologies, local network media, network devices, network security and networking tools. Includes more in-depth study of the components of TCP/IP, Ethernet, and wireless networks. Involves considerable time developing troubleshooting skills.
10150166 Incident Response (3 cr.)	A capstone course in which students respond and manage the aftermath of a security breach. This class will simulate a real-world security attack. Students will identify the event and handle the situation in a way that will limit damages, reduce recovery time and manage the overall cost of the event.
10150167 Risk Assessment (3 cr.)	Students will learn the practical skills necessary to perform regular risk assessments for their organizations. Every organization needs to make priority decisions on how best to defend their valuable data assets. Risk management should be the foundational tool used to facilitate thoughtful and purposeful defense strategies. Students will implement standards-based, proven methodologies for assessing and managing risk and select and implement security controls that ensure compliance with applicable laws, regulations, policies, and directives.

Course Descriptions

10150168 Security Monitoring and Operations (3 cr.)	Examine the systems put in place to analyze threats and detect anomalies that could indicate a security incident. The challenge companies face is timely detection when they are victimized by an attack. Students will become familiar with policies, procedures, and continuous monitoring programs that can be utilized to protect an organization.
10154110 Enterprise Client (3 cr.)	Introduces students to the skills needed to support client PC Operating Systems. Through significant hands-on activities, learn how to configure, secure, utilize and troubleshoot client operating systems.
10504176 CCI: Computer Crime Investigation (2 cr.)	Provides students with the skills, knowledge and ability to conduct computer crime investigations. Students will learn investigative protocols that can be applied to various types of computer crimes, focusing on the collection of evidence to initiate a criminal prosecution.
10504179 CCI: Basic Data Recovery (2 cr.)	Provides students with a basic understanding of how forensic evidence is recovered from a computer or similar device. Students will learn the necessary steps involved in preserving, authenticating, and analyzing data stored on computing devices, while maintaining the integrity of evidence found on these devices.
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
10804133 Math & Logic (3 cr.)	Students will apply problem solving techniques from discrete mathematics. Topics include symbolic logic, sets, algebra and base number systems.
10809166 Intro to Ethics: Theory & App (3 cr.)	This course provides a basic understanding of the theoretical foundations of ethical thought. Diverse ethical perspectives will be used to analyze and compare relevant issues. Students will critically evaluate individual, social and professional standards of behavior, and apply a systematic decision-making process to these situations.

Course Descriptions

10809199 Psychology of Human Relations (3 cr.)

Explores the relationship between the general principles of psychology and our everyday lives. Students are given the opportunity to achieve a deepened sense of awareness of themselves and others. This understanding enables students to improve their relationships with others at work, in the family, and in society.

10890100 College Success: On Course (1 cr.)

On Course helps you learn a number of proven strategies for creating greater academic, professional and personal success. You will discover how to create a rich, fulfilling life by developing new beliefs and behaviors. College Success: On Course empowers you to make wise choices in your academic and personal life which leads to improved experiences and outcomes.

152 - IT - Software IT - Development

10152101 HTML 5 (3 cr.)

Presents the foundation skills necessary to create Web pages using HyperText Markup Language (HTML). Covers design concepts, hypertext links, tables, frames and Cascading Style Sheets (CSS).

10152111 C# Introduction to Programming (3 cr.)

Introduces students with little or no programming background to programming and logic principles that apply to traditional and Windows systems. Uses C# to apply the principles by developing simple Windows applications.

10890100 College Success: On Course (1 cr.)

On Course helps you learn a number of proven strategies for creating greater academic, professional and personal success. You will discover how to create a rich, fulfilling life by developing new beliefs and behaviors. College Success: On Course empowers you to make wise choices in your academic and personal life which leads to improved experiences and outcomes.

152 - IT - Software IT - Mobile Applications Development

10152111 C# Introduction to Programming (3 cr.)

Introduces students with little or no programming background to programming and logic principles that apply to traditional and Windows systems. Uses C# to apply the principles by developing simple Windows applications.

10152180 Introduction to Mobile Development (3 cr.)

Introduces students to the different stages of development for mobile applications. We will cover the different language options and the process of getting an application to be available in a world market. This class will also cover development strategies for iPhone, iPad, Android and the Windows Phone.

10152181 iOS Programming (3 cr.)

Provides students with an in-depth overview of how to set up for iOS development while gaining an understanding of the iOS platform and the tools available in that environment including Objective C.

Course Descriptions

10152182 Android Programming (3 cr.) Introduces students to designing and building mobile applications using the Android™ open-source platform using Java and Eclipse. This course provides students an in-depth overview of how to set up for Android™ development while providing an understanding of Android™, its services and how it fits into the overall Linux run time.

152 - IT - Software IT - Software Developer

10107110 IT Career Experience (2 cr.) Examines and identifies job-seeking, job-keeping and interviewing techniques, strategies for identifying and meeting external and internal customer needs as well as good listening skills and techniques for dealing with difficult customers. Also covers time management, team dynamics, continual improvement processes and global business practices.

10107158 Systems Analysis (3 cr.) Introduces the principles and techniques of modern system analysis and design. It explores the fundamentals of traditional systems and methodologies, data flow diagrams and case tools. It also tracks the systems' development life cycle and explains the various stages.

10152101 HTML 5 (3 cr.) Presents the foundation skills necessary to create Web pages using HyperText Markup Language (HTML). Covers design concepts, hypertext links, tables, frames and Cascading Style Sheets (CSS).

10152108 Advanced Software Development (3 cr.) Explores advanced programming techniques using the Microsoft.NET environment. Focuses on using Object Oriented Programming (OOP), advanced controls, data reporting tools, deployment methods and database access methods. Project design and management methodologies will be developed throughout the class.

10152111 C# Introduction to Programming (3 cr.) Introduces students with little or no programming background to programming and logic principles that apply to traditional and Windows systems. Uses C# to apply the principles by developing simple Windows applications.

10152114 Computer Programming C++ (3 cr.) Introduces C++ programming concepts and statements including input and output of data in a console application, variables and data type considerations, if-else and switch-case programming constructs, looping constructs, creating programmer defined functions, arrays, pointers, string manipulation, data structures and sequential file processing. It also introduces Object Oriented Programming in the C++ language.

10152116 C# Intermediate Programming (3 cr.) Covers C# programming concepts and statements starting with basic class/object terminology. Investigates data types, methods and behaviors, iteration, arrays, lists and collections, Windows (GUI) programming, event programming, inheritance, file IO, exception handling and Database access methods.

Course Descriptions

10152121 PHP (3 cr.)	Introduces concepts in developing dynamic, server-side Web applications that accept input from forms, process the data on the Web Server to maintain a database. Two approaches are covered: open source language PHP and Microsoft's ASP.Net framework. Concepts of HTML extended to learn techniques to develop a robust, interactive website.
10152125 ASP.Net (3 cr.)	Gives students a first look at the ASP.Net architecture to create and maintain a dynamic Web site. Microsoft's Visual Studio will be used to design, code and test multi-page Web applications that use a database and manage state. Master pages and themes, grid controls and 3-tier applications are covered.
10152126 Agile Development (3 cr.)	A capstone course in which students utilize multiple Web technologies to build a complete and functional Web site in a group setting to simulate real-world development. Project design and management methodologies will also be introduced to expose students to estimating and project management techniques.
10152134 Modern JavaScript (3 cr.)	Covers basic syntax and code structure that includes changes from ES5 through ES6+. You will be coding web apps to enhance your understanding of the Document Object Model, validating forms, manipulating data, dynamically modifying pages, and creating objects. Debugging techniques will be covered to help with troubleshooting your code. You will then move into more advanced topics, such as, managing state information and security, developing for touchscreen and mobile devices, managing data requests, and working with third-party APIs. Knowledge from this course will help when coding with other JavaScript libraries and frameworks.
10152168 Data Access for Programmers (3 cr.)	Provides background in fundamental database concepts, design, documentation, implementation and distribution involving the relational database model. Students will create, query and update relational databases using Structured Query Language (SQL).
10152170 Data Administration Techniques (3 cr.)	Covers the operation and management of client/server back-end relational databases. Topics include data definition language, table modification, creating views, indices, triggers, transactions, backup and recovery.
10152180 Introduction to Mobile Development (3 cr.)	Introduces students to the different stages of development for mobile applications. We will cover the different language options and the process of getting an application to be available in a world market. This class will also cover development strategies for iPhone, iPad, Android and the Windows Phone.

Course Descriptions

- 10152182 Android Programming (3 cr.)** Introduces students to designing and building mobile applications using the Android TM open-source platform using Java and Eclipse. This course provides students an in-depth overview of how to set up for Android TM development while providing an understanding of Android TM, its services and how it fits into the overall Linux run time.
- 10801195 Written Communication (3 cr.)** Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
- 10801196 Oral/Interpersonal Comm (3 cr.)** Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
- 10804133 Math & Logic (3 cr.)** Students will apply problem solving techniques from discrete mathematics. Topics include symbolic logic, sets, algebra and base number systems.
- 10809166 Intro to Ethics: Theory & App (3 cr.)** This course provides a basic understanding of the theoretical foundations of ethical thought. Diverse ethical perspectives will be used to analyze and compare relevant issues. Students will critically evaluate individual, social and professional standards of behavior, and apply a systematic decision-making process to these situations.
- 10809199 Psychology of Human Relations (3 cr.)** Explores the relationship between the general principles of psychology and our everyday lives. Students are given the opportunity to achieve a deepened sense of awareness of themselves and others. This understanding enables students to improve their relationships with others at work, in the family, and in society.
- 10890100 College Success: On Course (1 cr.)** On Course helps you learn a number of proven strategies for creating greater academic, professional and personal success. You will discover how to create a rich, fulfilling life by developing new beliefs and behaviors. College Success: On Course empowers you to make wise choices in your academic and personal life which leads to improved experiences and outcomes.

152 - IT - Software IT - Web Development and Design Specialist

Course Descriptions

10107110 IT Career Experience (2 cr.)	Examines and identifies job-seeking, job-keeping and interviewing techniques, strategies for identifying and meeting external and internal customer needs as well as good listening skills and techniques for dealing with difficult customers. Also covers time management, team dynamics, continual improvement processes and global business practices.
10150144 Ethical Hacking (3 cr.)	Introduces the techniques hackers use to discover vulnerabilities. Students will learn ways to tighten the network security to protect the exposed data from the discovered vulnerabilities. Focus is on penetration-testing tools and techniques that security testers and ethical hackers use to protect computer networks.
10152100 Introduction to Web Design (3 cr.)	Provides an introduction to the user experience approach to website design. Students will gain an understanding of what is involved in the research phase, including conducting interviews and evaluating systems using principles of good design. Prototypes will be created providing a design solution.
10152101 HTML 5 (3 cr.)	Presents the foundation skills necessary to create Web pages using HyperText Markup Language (HTML). Covers design concepts, hypertext links, tables, frames and Cascading Style Sheets (CSS).
10152105 Web Graphics, Introduction to (3 cr.)	Introduces the fundamental concepts necessary to generate and prepare graphics for Web pages. The course will focus on raster as well as vector images. Areas addressed will be color selection, layout, text, optimizing images, creating backgrounds, slicing, creating navigation, transparent graphics and animated graphics. Adobe software will be utilized.
10152106 Cascading Style Sheets (CSS cr.) (3 cr.)	Learn about responsive CSS. The course will cover CSS structure, current properties and concepts to create responsive web layouts that will meet web accessible standards and work on multiple devices. In addition you will learn to apply CSS properties, and their values, to enhance the visual appearance of your web site.
10152111 C# Introduction to Programming (3 cr.)	Introduces students with little or no programming background to programming and logic principles that apply to traditional and Windows systems. Uses C# to apply the principles by developing simple Windows applications.
10152121 PHP (3 cr.)	Introduces concepts in developing dynamic, server-side Web applications that accept input from forms, process the data on the Web Server to maintain a database. Two approaches are covered: open source language PHP and Microsoft's ASP.Net framework. Concepts of HTML extended to learn techniques to develop a robust, interactive website.

Course Descriptions

10152125 ASP.Net (3 cr.)	Gives students a first look at the ASP.Net architecture to create and maintain a dynamic Web site. Microsoft's Visual Studio will be used to design, code and test multi-page Web applications that use a database and manage state. Master pages and themes, grid controls and 3-tier applications are covered.
10152126 Agile Development (3 cr.)	A capstone course in which students utilize multiple Web technologies to build a complete and functional Web site in a group setting to simulate real-world development. Project design and management methodologies will also be introduced to expose students to estimating and project management techniques.
10152131 WordPress (3 cr.)	Introduces the basics of WordPress. Students will learn how to create blog sites, publish posts and pages, work with themes, employ widgets, create custom menus, activate plugins, and utilize page templates. Students will work to customize WordPress themes and learn how to make WordPress more secure. The course will use HTML, CSS, and the current version of WordPress.
10152132 Mobile Web (3 cr.)	Develop responsive, mobile first web pages using React and the open-source framework, Bootstrap.
10152134 Modern JavaScript (3 cr.)	Covers basic syntax and code structure that includes changes from ES5 through ES6+. You will be coding web apps to enhance your understanding of the Document Object Model, validating forms, manipulating data, dynamically modifying pages, and creating objects. Debugging techniques will be covered to help with troubleshooting your code. You will then move into more advanced topics, such as, managing state information and security, developing for touchscreen and mobile devices, managing data requests, and working with third-party APIs. Knowledge from this course will help when coding with other JavaScript libraries and frameworks.
10152168 Data Access for Programmers (3 cr.)	Provides background in fundamental database concepts, design, documentation, implementation and distribution involving the relational database model. Students will create, query and update relational databases using Structured Query Language (SQL).
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.

Course Descriptions

10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
10804133 Math & Logic (3 cr.)	Students will apply problem solving techniques from discrete mathematics. Topics include symbolic logic, sets, algebra and base number systems.
10809166 Intro to Ethics: Theory & App (3 cr.)	This course provides a basic understanding of the theoretical foundations of ethical thought. Diverse ethical perspectives will be used to analyze and compare relevant issues. Students will critically evaluate individual, social and professional standards of behavior, and apply a systematic decision-making process to these situations.
10809199 Psychology of Human Relations (3 cr.)	Explores the relationship between the general principles of psychology and our everyday lives. Students are given the opportunity to achieve a deepened sense of awareness of themselves and others. This understanding enables students to improve their relationships with others at work, in the family, and in society.
10890100 College Success: On Course (1 cr.)	On Course helps you learn a number of proven strategies for creating greater academic, professional and personal success. You will discover how to create a rich, fulfilling life by developing new beliefs and behaviors. College Success: On Course empowers you to make wise choices in your academic and personal life which leads to improved experiences and outcomes.
152 - IT - Software Fundamentals	
10152101 HTML 5 (3 cr.)	Presents the foundation skills necessary to create Web pages using HyperText Markup Language (HTML). Covers design concepts, hypertext links, tables, frames and Cascading Style Sheets (CSS).
10152111 C# Introduction to Programming (3 cr.)	Introduces students with little or no programming background to programming and logic principles that apply to traditional and Windows systems. Uses C# to apply the principles by developing simple Windows applications.
10152116 C# Intermediate Programming (3 cr.)	Covers C# programming concepts and statements starting with basic class/object terminology. Investigates data types, methods and behaviors, iteration, arrays, lists and collections, Windows (GUI) programming, event programming, inheritance, file IO, exception handling and Database access methods.
10152168 Data Access for Programmers (3 cr.)	Provides background in fundamental database concepts, design, documentation, implementation and distribution involving the relational database model. Students will create, query and update relational databases using Structured Query Language (SQL).

Course Descriptions

10890100 College Success: On Course (1 cr.) On Course helps you learn a number of proven strategies for creating greater academic, professional and personal success. You will discover how to create a rich, fulfilling life by developing new beliefs and behaviors. College Success: On Course empowers you to make wise choices in your academic and personal life which leads to improved experiences and outcomes.

152 - IT - Software Web Design

10152100 Introduction to Web Design (3 cr.) Provides an introduction to the user experience approach to website design. Students will gain an understanding of what is involved in the research phase, including conducting interviews and evaluating systems using principles of good design. Prototypes will be created providing a design solution.

10152101 HTML 5 (3 cr.) Presents the foundation skills necessary to create Web pages using HyperText Markup Language (HTML). Covers design concepts, hypertext links, tables, frames and Cascading Style Sheets (CSS).

10152105 Web Graphics, Introduction to (3 cr.) Introduces the fundamental concepts necessary to generate and prepare graphics for Web pages. The course will focus on raster as well as vector images. Areas addressed will be color selection, layout, text, optimizing images, creating backgrounds, slicing, creating navigation, transparent graphics and animated graphics. Adobe software will be utilized.

10152106 Cascading Style Sheets (CSS cr.) (3 cr.) Learn about responsive CSS. The course will cover CSS structure, current properties and concepts to create responsive web layouts that will meet web accessible standards and work on multiple devices. In addition you will learn to apply CSS properties, and their values, to enhance the visual appearance of your web site.

10152111 C# Introduction to Programming (3 cr.) Introduces students with little or no programming background to programming and logic principles that apply to traditional and Windows systems. Uses C# to apply the principles by developing simple Windows applications.

10152121 PHP (3 cr.) Introduces concepts in developing dynamic, server-side Web applications that accept input from forms, process the data on the Web Server to maintain a database. Two approaches are covered: open source language PHP and Microsoft's ASP.Net framework. Concepts of HTML extended to learn techniques to develop a robust, interactive website.

Course Descriptions

- 10152134 Modern JavaScript (3 cr.)** Covers basic syntax and code structure that includes changes from ES5 through ES6+. You will be coding web apps to enhance your understanding of the Document Object Model, validating forms, manipulating data, dynamically modifying pages, and creating objects. Debugging techniques will be covered to help with troubleshooting your code. You will then move into more advanced topics, such as, managing state information and security, developing for touchscreen and mobile devices, managing data requests, and working with third-party APIs. Knowledge from this course will help when coding with other JavaScript libraries and frameworks.
- 10152168 Data Access for Programmers (3 cr.)** Provides background in fundamental database concepts, design, documentation, implementation and distribution involving the relational database model. Students will create, query and update relational databases using Structured Query Language (SQL).
- 10801195 Written Communication (3 cr.)** Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
- 10890100 College Success: On Course (1 cr.)** On Course helps you learn a number of proven strategies for creating greater academic, professional and personal success. You will discover how to create a rich, fulfilling life by developing new beliefs and behaviors. College Success: On Course empowers you to make wise choices in your academic and personal life which leads to improved experiences and outcomes.
- 154 - IT - Computer IT - Computer Support Specialist**
- 10107102 Exploring IT Foundations (2 cr.)** Pursue this introductory course where students explore information technology-based tasks from a variety of IT roles. Students will be introduced to various technologies used on in industry.
- 10107110 IT Career Experience (2 cr.)** Examines and identifies job-seeking, job-keeping and interviewing techniques, strategies for identifying and meeting external and internal customer needs as well as good listening skills and techniques for dealing with difficult customers. Also covers time management, team dynamics, continual improvement processes and global business practices.

Course Descriptions

10107150 Microcomputer Applications (2 cr.)	Designed for students with little or no hands-on computer experience. Presents the basic functions of the Windows operating system and how to use the word processing, spreadsheet and presentation functions of Microsoft Office software. Students will integrate various functions of several Microsoft packages.
10150105 Virtualization Technologies (3 cr.)	Introduces virtualization technologies including VMware, Citrix and Microsoft Hyper-V. Hands-on lab activities will be used to install and configure each virtualized environment.
10150116 Network Infrastructure 1 (3 cr.)	Covers networking topics including the OSI model, local area and wide area networking. Also focuses on assigning network addresses and configuring network devices including Cisco routers and switches. Includes considerable hands-on learning activities and helps prepare learner for the Cisco CCNA exam.
10150127 IT Project Management (2 cr.)	Examines the organization, planning and controlling of projects; also provides practical knowledge on managing project scope, schedule and resources. Topics include project life cycle, work breakdown structure and Gantt charts, network diagrams, scheduling techniques and resource allocation decisions. Concepts are applied through team projects and tutorials using project management software.
10150147 Linux (2 cr.)	Covers introductory Linux topics including operating system basics, system installation, file system management, file system administration and basic commands. Considerable hands-on learning is included.
10150155 Linux Essentials - Just Enough Linux (1 cr.)	Covers Basic Linux topics including operating system basics, file management, graphic user interfaces and the command line interface.
10150156 Windows Server (3 cr.)	Covers Microsoft Windows Server administration including server hardware and software, Active Directory, file resources, printers, disk resources, Web resources, DNS and DHCP. Monitoring and troubleshooting server resources are also examined. Extensive hands-on activities are included.
10150161 Information Assurance (2 cr.)	Examines the basics of information security, including access control and organizational security policies. This course will include the process of securing user workstations, laptops and mobile devices.
10150162 Network Essentials (2 cr.)	Provides an introduction to networking theory and technologies, including the basics of communication, common protocols, the OSI model, network topologies, local network media, network devices, network security and networking tools. Includes more in-depth study of the components of TCP/IP, Ethernet, and wireless networks. Involves considerable time developing troubleshooting skills.

Course Descriptions

10154101 Emerging Technologies and Trends (3 cr.)	Explores the acquisition and support of various technologies and how they interact with businesses. Students will learn how organizations implement technology solutions, research potential solutions to real-world business problems, and present their findings.
10154102 IT Customer Service Skills (2 cr.)	Covers the interpersonal, communication and problem-solving skills required in technical support positions. Exercises provide interaction with other learners in a team. Students explore the information and technical tools needed to function effectively in a support position. Students will be expected to schedule an additional hour each week in the on-campus Student Help Desk, developing skills working with customers in a help desk setting.
10154105 Advanced Desktop Management (2 cr.)	Provides students with the background needed to build the knowledge and skills to support end-users and computers running the Microsoft suite of productivity applications. The course is directed at the skills needed to work in a variety of environments, including corporate environments as well as support for home users via phone support, remote support and retail counter support.
10154108 IT Service Desk Capstone (2 cr.)	Demonstrate the knowledge and skills necessary to work in an IT Service Desk, including managing information technology hardware, software, creating business solutions, supporting computer networks, providing end user support and solving information technology problems all while demonstrating a high level of professionalism.
10154109 IT Service Desk Concepts (3 cr.)	Introduces how people, processes, technology, and information affect an IT Service Desk. Students are introduced to industry standard ITIL terminology and practices and develop skills working with customers in a Service Desk setting. Explains basic concepts and implementation of a training plan and how to train end-users.
10154110 Enterprise Client (3 cr.)	Introduces students to the skills needed to support client PC Operating Systems. Through significant hands-on activities, learn how to configure, secure, utilize and troubleshoot client operating systems.
10154111 Device Repair and Maintenance (3 cr.)	Covers configuring, maintaining, upgrading and repairing Intel-based computers and exploring functions and interrelations between components. The course examines system configuration, component care, system improvement, troubleshooting and failure identification.
10154114 Infrastructure Automation (3 cr.)	Introduces students to the fundamental skills needed to manage and automate IT Infrastructures. Students will learn the basics of scripting and command line environments using Windows PowerShell and other tools aiding system administrators in automating IT infrastructure.

Course Descriptions

10801195 Written Communication (3 cr.) Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.

10801196 Oral/Interpersonal Comm (3 cr.) Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.

10804133 Math & Logic (3 cr.) Students will apply problem solving techniques from discrete mathematics. Topics include symbolic logic, sets, algebra and base number systems.

10809166 Intro to Ethics: Theory & App (3 cr.) This course provides a basic understanding of the theoretical foundations of ethical thought. Diverse ethical perspectives will be used to analyze and compare relevant issues. Students will critically evaluate individual, social and professional standards of behavior, and apply a systematic decision-making process to these situations.

10809199 Psychology of Human Relations (3 cr.) Explores the relationship between the general principles of psychology and our everyday lives. Students are given the opportunity to achieve a deepened sense of awareness of themselves and others. This understanding enables students to improve their relationships with others at work, in the family, and in society.

10890100 College Success: On Course (1 cr.) On Course helps you learn a number of proven strategies for creating greater academic, professional and personal success. You will discover how to create a rich, fulfilling life by developing new beliefs and behaviors. College Success: On Course empowers you to make wise choices in your academic and personal life which leads to improved experiences and outcomes.

154 - IT - Computer IT - Help Desk Support Specialist

10107102 Exploring IT Foundations (2 cr.) Pursue this introductory course where students explore information technology-based tasks from a variety of IT roles. Students will be introduced to various technologies used on in industry.

10107150 Microcomputer Applications (2 cr.) Designed for students with little or no hands-on computer experience. Presents the basic functions of the Windows operating system and how to use the word processing, spreadsheet and presentation functions of Microsoft Office software. Students will integrate various functions of several Microsoft packages.

Course Descriptions

10150155 Linux Essentials - Just Enough Linux (1 cr.)	Covers Basic Linux topics including operating system basics, file management, graphic user interfaces and the command line interface.
10150161 Information Assurance (2 cr.)	Examines the basics of information security, including access control and organizational security policies. This course will include the process of securing user workstations, laptops and mobile devices.
10150162 Network Essentials (2 cr.)	Provides an introduction to networking theory and technologies, including the basics of communication, common protocols, the OSI model, network topologies, local network media, network devices, network security and networking tools. Includes more in-depth study of the components of TCP/IP, Ethernet, and wireless networks. Involves considerable time developing troubleshooting skills.
10154102 IT Customer Service Skills (2 cr.)	Covers the interpersonal, communication and problem-solving skills required in technical support positions. Exercises provide interaction with other learners in a team. Students explore the information and technical tools needed to function effectively in a support position. Students will be expected to schedule an additional hour each week in the on-campus Student Help Desk, developing skills working with customers in a help desk setting.
10154105 Advanced Desktop Management (2 cr.)	Provides students with the background needed to build the knowledge and skills to support end-users and computers running the Microsoft suite of productivity applications. The course is directed at the skills needed to work in a variety of environments, including corporate environments as well as support for home users via phone support, remote support and retail counter support.
10154109 IT Service Desk Concepts (3 cr.)	Introduces how people, processes, technology, and information affect an IT Service Desk. Students are introduced to industry standard ITIL terminology and practices and develop skills working with customers in a Service Desk setting. Explains basic concepts and implementation of a training plan and how to train end-users.
10154110 Enterprise Client (3 cr.)	Introduces students to the skills needed to support client PC Operating Systems. Through significant hands-on activities, learn how to configure, secure, utilize and troubleshoot client operating systems.
10154111 Device Repair and Maintenance (3 cr.)	Covers configuring, maintaining, upgrading and repairing Intel-based computers and exploring functions and interrelations between components. The course examines system configuration, component care, system improvement, troubleshooting and failure identification.

Course Descriptions

10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
10890100 College Success: On Course (1 cr.)	On Course helps you learn a number of proven strategies for creating greater academic, professional and personal success. You will discover how to create a rich, fulfilling life by developing new beliefs and behaviors. College Success: On Course empowers you to make wise choices in your academic and personal life which leads to improved experiences and outcomes.
156 - IT - IT - Data and Analytics Specialist	
10107110 IT Career Experience (2 cr.)	Examines and identifies job-seeking, job-keeping and interviewing techniques, strategies for identifying and meeting external and internal customer needs as well as good listening skills and techniques for dealing with difficult customers. Also covers time management, team dynamics, continual improvement processes and global business practices.
10150155 Linux Essentials - Just Enough Linux (1 cr.)	Covers Basic Linux topics including operating system basics, file management, graphic user interfaces and the command line interface.
10150162 Network Essentials (2 cr.)	Provides an introduction to networking theory and technologies, including the basics of communication, common protocols, the OSI model, network topologies, local network media, network devices, network security and networking tools. Includes more in-depth study of the components of TCP/IP, Ethernet, and wireless networks. Involves considerable time developing troubleshooting skills.
10152168 Data Access for Programmers (3 cr.)	Provides background in fundamental database concepts, design, documentation, implementation and distribution involving the relational database model. Students will create, query and update relational databases using Structured Query Language (SQL).
10152170 Data Administration Techniques (3 cr.)	Covers the operation and management of client/server back-end relational databases. Topics include data definition language, table modification, creating views, indices, triggers, transactions, backup and recovery.
10156103 Python Data Programming (3 cr.)	Introduction to programming using the Python language. Covers programming fundamentals including variables, datatypes, loops, conditionals, functions, and libraries. Examples focus on storage, retrieval, and manipulation of data.
10156104 Data Analytics, Introduction (3 cr.)	Technologies and techniques for identifying, collecting, preparing, processing, and analyzing data relevant to business questions.

Course Descriptions

10156105 Data Analytics, Intermediate (3 cr.)	Additional technologies and techniques for analyzing data, including cloud cognitive services and simple machine learning. Also examines organizational processes surrounding data as well as business analysis for data projects.
10156106 Programming in R (3 cr.)	Programming in the R statistical computing language. Examples cover data manipulation, analysis, and plotting.
10156107 ETL & Data Warehousing (3 cr.)	Automating data pipelines. Code Extract, Transform, Load (ETL) procedures to connect a variety of data producers, repositories, and consumers. Explores various strategies and schemas for data warehousing as well as the overall flow of data through the organization and its systems.
10156108 Business Intelligence & Data Visualization (3 cr.)	Technologies and techniques for communicating summaries, insights, and predictions gleaned from data analyses. Examines storytelling through report design, infographics, charts and graphs, purpose-built interactive dashboards, as well as custom visualizations and animations.
10156109 Big Data (3 cr.)	Explores the problems created by, strategies to tackle, and technologies to work with large data sets.
10156110 Data Analytics Capstone (3 cr.)	Complete a data project modeled as a real-world scenario. Project phases include business analysis; designing, building, and automating data infrastructure; analysis; visualization; and presenting findings to decision-makers.
10801136 English Composition 1 (3 cr.)	Learners develop and apply skills in all aspects of the writing process. Through a variety of learning activities and written documents, learners employ rhetorical strategies, plan, organize and revise content, apply critical reading strategies, locate and evaluate information, integrate and document sources, and apply standardized English language conventions.
10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
10804133 Math & Logic (3 cr.)	Students will apply problem solving techniques from discrete mathematics. Topics include symbolic logic, sets, algebra and base number systems.
10804135 Quantitative Reasoning (3 cr.)	This course is intended to develop analytic reasoning and the ability to solve quantitative problems. Topics to be covered may include: construction & interpretation of graphs; descriptive statistics; geometry & spatial visualizations; math of finance; functions and modeling; probability; and logic. Appropriate use of units and dimensions, estimates, mathematical notation, and available technology will be emphasized throughout the course.

Course Descriptions

10804189 Introductory Statistics (3 cr.)	Students taking Introductory Statistics display data with graphs, describe distributions with numbers perform correlation and regression analyses, and design experiments. They use probability and distributions to make predictions, estimate parameters, and test hypotheses. They draw inferences about relationships including ANOVA.
10809166 Intro to Ethics: Theory & App (3 cr.)	This course provides a basic understanding of the theoretical foundations of ethical thought. Diverse ethical perspectives will be used to analyze and compare relevant issues. Students will critically evaluate individual, social and professional standards of behavior, and apply a systematic decision-making process to these situations.
10809198 Intro to Psychology (3 cr.)	This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.
10890100 College Success: On Course (1 cr.)	On Course helps you learn a number of proven strategies for creating greater academic, professional and personal success. You will discover how to create a rich, fulfilling life by developing new beliefs and behaviors. College Success: On Course empowers you to make wise choices in your academic and personal life which leads to improved experiences and outcomes.
160 - Business Health Medical Administrative Professional	
10101107 Accounting, Principles of (3 cr.)	Introduces basic concepts and general principles of accounting to non-accounting students. Topics include financial statements, merchandising accounting for cash, inventory, payroll, budgeting and accounting software.
10103120 MS Office Suite, Introduction (2 cr.)	Provides an opportunity to gain technical skills employers are seeking, by using the features in Outlook, Word, Excel, and PowerPoint. Through hands-on course work, students will be able to integrate Word, Excel and PowerPoint.
10106101 Web Technologies (2 cr.)	Focuses on social and business web applications and components. Students will develop skills to create engaging content for the web.
10106112 Keyboarding Speed Development (1 cr.)	Focuses on improving typing speed and accuracy through the use of skill-building software. Introduces data entry using the numeric keypad.
10106116 Professional Business Writing (2 cr.)	Focuses on spelling, grammar, and punctuation as applied to business documents in both print and digital mediums. Students will develop skills to write professional content for specific business documents.

Course Descriptions

10160100 Intro to Medical Administrative Careers (1 cr.)	Introduces various aspects of medical administrative careers. Explores a variety of topics including career expectations, future employment opportunities and current employment trends.
10160102 Medical Office Procedures (3 cr.)	Emphasizes the principles of medical office procedures. Students will gain experience in understanding medical law and ethics, utilizing effective oral and written communication, and managing medical office procedures including appointment scheduling, patient reception and registration, medical records, medical billing, health insurance, business operations, human resource functions, and financial management. Students will also gain knowledge in locating and obtaining a position in a medical office.
10160106 Business Health Simulation (3 cr.)	Provides simulated on-the-job training that allows students to apply the theories, skills and techniques studied in the Medical Office Assistant program. Students work a minimum of 144 hours in a simulated business health environment. The simulation includes weekly discussions related to job search and career planning.
10160107 Professionalism for Medical Admin. Professionals (2 cr.)	Develops professional traits and behaviors related to the Business Health Services industry. Students will focus on business etiquette, ethics, diversity, customer service, problem solving, and communication
10160108 Health Insurance Principles (3 cr.)	Provides an overview of health insurance terminology. Students gain knowledge of various insurance programs including private health insurance, dental insurance, Workersâ€™ TM Compensation, disability insurance, hospital insurance and government plans.
10160109 Business Health Documentation (3 cr.)	Provides introduction to business health documentation practices. Students will develop skills in the areas of medical and English language, proofreading, editing and research.
10160112 Business Health Billing Applications (3 cr.)	Provides an overview of billing and collection processes within the Business Health Services industry. Students will gain skill in understanding forms, billings, collections and insurance.
10501101 Medical Terminology (3 cr.)	Focuses on the component parts of medical terms: prefixes, suffixes and word roots. Students practice formation, analysis and reconstruction of terms. Emphasis on spelling, definition and pronunciation. Introduction to operative, diagnostic, therapeutic and symptomatic terminology of all body systems, as well as systemic and surgical terminology.
10501109 Medical Law, Ethics & Profess (2 cr.)	Prepares students to display professionalism and perform within ethical and legal boundaries in the health care setting. Students maintain confidentiality, examine legal aspects of the medical record, perform risk management procedures, and examine legal and bioethical issues.

Course Descriptions

10501151 People Skills for Health Professionals (1 cr.)	Explores professional/social interaction skills required for healthcare workers. Investigates values, ethical dilemmas, helping roles, assertiveness skills, communication with special populations, death/dying issues and stress management interventions. Participate in reflective self-study group discussions and service learning experiences. Develop a professional portfolio for future employment use.
10501153 Body Structure and Function (2 cr.)	Introduces basic anatomy and physiology of the human body. Students explore the basics of cells and cell chemistry and build on that knowledge to develop an understanding of tissues, organs, and organ systems. Students explore each body system and how systems function under normal (homeostatic) body conditions. Students develop an overall understanding of how the human body operates on a minute to minute, day to day, basis when all systems are functioning properly.
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
10804123 Math w Business Apps (3 cr.)	This course integrates algebraic concepts, proportions, percents, simple interest, compound interest, annuities, and basic statistics with business/consumer scenarios. It also applies math concepts to the purchasing/buying and selling processes.
10809172 Introduction to Diversity Studies (3 cr.)	This course introduces the study of diversity from a local to a global perspective using a holistic, interdisciplinary approach that encourages exploration and prepares students to work in a diverse environment. The course introduces basic diversity concepts, examines the impact of bias and power differentials among groups, explores the use of culturally responsive communication strategies, and compares forces that shape diversity in an international context.
10809195 Economics (3 cr.)	This course is designed to give an overview of microeconomics, macroeconomics, and international economics. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues.

Course Descriptions

10809196 Intro to Sociology (3 cr.)	Introduces students to the fundamental sociological concepts, including sociological perspectives, research methods, the significance of culture in society, and the socialization process. Other topics include deviance, the impact of groups on behavior, societal inequities, global changes, the role of social institutions, and social stratification.
10809199 Psychology of Human Relations (3 cr.)	Explores the relationship between the general principles of psychology and our everyday lives. Students are given the opportunity to achieve a deepened sense of awareness of themselves and others. This understanding enables students to improve their relationships with others at work, in the family, and in society.
160 - Business Health Medical Office Assistant	
10103120 MS Office Suite, Introduction (2 cr.)	Provides an opportunity to gain technical skills employers are seeking, by using the features in Outlook, Word, Excel, and PowerPoint. Through hands-on course work, students will be able to integrate Word, Excel and PowerPoint.
10106101 Web Technologies (2 cr.)	Focuses on social and business web applications and components. Students will develop skills to create engaging content for the web.
10106112 Keyboarding Speed Development (1 cr.)	Focuses on improving typing speed and accuracy through the use of skill-building software. Introduces data entry using the numeric keypad.
10106116 Professional Business Writing (2 cr.)	Focuses on spelling, grammar, and punctuation as applied to business documents in both print and digital mediums. Students will develop skills to write professional content for specific business documents.
10160100 Intro to Medical Administrative Careers (1 cr.)	Introduces various aspects of medical administrative careers. Explores a variety of topics including career expectations, future employment opportunities and current employment trends.
10160102 Medical Office Procedures (3 cr.)	Emphasizes the principles of medical office procedures. Students will gain experience in understanding medical law and ethics, utilizing effective oral and written communication, and managing medical office procedures including appointment scheduling, patient reception and registration, medical records, medical billing, health insurance, business operations, human resource functions, and financial management. Students will also gain knowledge in locating and obtaining a position in a medical office.
10160107 Professionalism for Medical Admin. Professionals (2 cr.)	Develops professional traits and behaviors related to the Business Health Services industry. Students will focus on business etiquette, ethics, diversity, customer service, problem solving, and communication

Course Descriptions

- 10501101 Medical Terminology (3 cr.)** Focuses on the component parts of medical terms: prefixes, suffixes and word roots. Students practice formation, analysis and reconstruction of terms. Emphasis on spelling, definition and pronunciation. Introduction to operative, diagnostic, therapeutic and symptomatic terminology of all body systems, as well as systemic and surgical terminology.
- 10501109 Medical Law, Ethics & Profess (2 cr.)** Prepares students to display professionalism and perform within ethical and legal boundaries in the health care setting. Students maintain confidentiality, examine legal aspects of the medical record, perform risk management procedures, and examine legal and bioethical issues.
- 10501151 People Skills for Health Professionals (1 cr.)** Explores professional/social interaction skills required for healthcare workers. Investigates values, ethical dilemmas, helping roles, assertiveness skills, communication with special populations, death/dying issues and stress management interventions. Participate in reflective self-study group discussions and service learning experiences. Develop a professional portfolio for future employment use.
- 10501153 Body Structure and Function (2 cr.)** Introduces basic anatomy and physiology of the human body. Students explore the basics of cells and cell chemistry and build on that knowledge to develop an understanding of tissues, organs, and organ systems. Students explore each body system and how systems function under normal (homeostatic) body conditions. Students develop an overall understanding of how the human body operates on a minute to minute, day to day, basis when all systems are functioning properly.
- 10801195 Written Communication (3 cr.)** Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
- 10804123 Math w Business Apps (3 cr.)** This course integrates algebraic concepts, proportions, percents, simple interest, compound interest, annuities, and basic statistics with business/consumer scenarios. It also applies math concepts to the purchasing/buying and selling processes.
- 170 - Broadcast Digital Court Reporter**
- 10103180 MS Word Introduction (1 cr.)** Presents basic features of Microsoft Word. Learn how to create, edit, and save documents; format characters, paragraphs, pages, and documents; apply special features when formatting; and create a merged document.

Course Descriptions

10103181 MS Excel Introduction (1 cr.)	Presents basic features of Microsoft Excel. Learn how to create, format, and edit worksheets; create formulas and tables; manage large workbooks; and analyze data with charts and What-If Analysis tools.
10103184 MS Word Intermediate (1 cr.)	Presents intermediate features of Microsoft Word. Learn how to use styles and create multilevel lists and charts, use advanced table features and editing tools, build documents from reusable content, and revise documents using markup tools.
10106112 Keyboarding Speed Development (1 cr.)	Focuses on improving typing speed and accuracy through the use of skill-building software. Introduces data entry using the numeric keypad.
10110102 Legal Fundamentals (3 cr.)	A study of how civil and criminal law governs society. Emphasis will be on understanding the state and federal court systems, legal terminology and legal theory. Students will develop those skills necessary to recognize and understand common legal issues facing the legal system. Students will explore the state and federal court systems, civil and criminal court procedure as well as various legal theories.
10110112 Legal Terminology, Introduction to (3 cr.)	Provides the student with the ability to spell, pronounce, and define legal terms used in a courtroom environment.
10170100 Digital Court Reporting, Introduction to (2 cr.)	Explores a relatively new career in the field of court reporting. Digital court reporting uses professional quality audio recording equipment to register court proceedings. A digital court reporter oversees and maintains the equipment necessary for recording court proceedings and is then responsible for subsequent transcripts.
10170102 Digital Audio Reporting Lab (2 cr.)	Introduces the student to the hardware and software used in courtrooms throughout the state of Wisconsin. Provides students with experience operating hardware and command of software.
10170103 Legal Transcription (3 cr.)	Develops skills needed to operate machine transcribers, transcribe legal documents into a physical document and use reference materials. Uses dictation material from local legal offices.
10170104 Legal Transcription 2 (3 cr.)	This is an advanced legal transcription and keyboarding course. Students will prepare a variety of legal documents. In addition, this course will emphasize advanced editing skills, speed, and accuracy of written record of proceedings of courtrooms and other legal proceedings.
10170115 DCR Grammar & Punctuation 1 (3 cr.)	Develops skills and understanding of parts of speech, sentence structure, and punctuation of the spoken word. Grammar and punctuation rules accommodate awkward, unclear, and incorrect English that can be commonplace within speech patterns and frequently found in legal transcripts.

Course Descriptions

10170116 DCR Grammar & Punctuation 2 (3 cr.) Develops advanced skills and understanding of parts of speech, sentence structure, and punctuation of the spoken word. Grammar and punctuation rules accommodate awkward, unclear, and incorrect English that can be commonplace within speech patterns and frequently found in legal transcripts.

182 - Logistics & Material Supply Chain Management

10101145 Spreadsheets, Beginning (1 cr.) Covers developing, constructing and printing basic business-related worksheets and reports using spreadsheet software. Students create, modify and print various charts based on worksheet data.

10101152 Spreadsheets, Intermediate (1 cr.) Covers developing and editing business-related worksheets. Students examine various functions such as If, Round, Sum, Average and Pmt. They also use Data Tables, Goal Seek, Scenarios and Solver to assist in decision making.

10102112 Business, Introduction to (3 cr.) Provides an overview of the variety of activities in the world of business. It focuses on the responsibilities connected with operating a business from both organizational and managerial viewpoints. It also examines the role of government in business.

10102124 BA Planning and Monitoring (3 cr.) Provides instruction in the multiple approaches used for performing business analysis, planning activities and ongoing communication, defining scopes, process improvements, assumptions, constraints, and dependencies, and the management process.

10103120 MS Office Suite, Introduction (2 cr.) Provides an opportunity to gain technical skills employers are seeking, by using the features in Outlook, Word, Excel, and PowerPoint. Through hands-on course work, students will be able to integrate Word, Excel and PowerPoint.

10116155 Business Ethics (3 cr.) Explores ethical considerations and sustainability issues across business areas such as human resources, accounting and marketing. Examines the differences between legal and ethical decision making.

10141166 Intercultural Relations (3 cr.) Prepare for today's increasingly global and diverse workplace by developing your intercultural competence. Explore the impact of culture on work behavior and professional relations, evaluate workplace cultural scenarios, and build a practical set of tools to effectively and appropriately interact across cultures in order to excel in today's business environment.

10182118 Principles of Inventory Management (3 cr.) Provides an operational knowledge and understanding of inventory management principles and techniques, sourcing strategies, the fundamental role of purchasing, purchase order management, ordering and stocking techniques, roles and responsibilities, and the impact inventory has on a business. The course provides practical examples and exercises, giving participants an opportunity to learn and practice inventory management techniques and concepts.

Course Descriptions

10182119 Principles of Operations Planning (3 cr.)	Provides a fundamental knowledge and understanding of the basic inventory planning principles and techniques that are used at each level in the planning process, from strategic to tactical. The course provides practical examples and exercises, giving participants an opportunity to practice and enhance their own planning skills.
10182120 Principles of Manufacturing Management (3 cr.)	Introduces the manufacturing environment and key manufacturing planning and control activities including material requirements planning, capacity management, capacity requirements planning, and lean manufacturing environments. Through discussion and interactive problem solving participants will gain a functional competency of production activity control and management.
10182121 Principles of Managing Operations (3 cr.)	Focuses on the systems, information technologies, and process management tools involved in designing and operating the manufacturing and distribution environment. This course is concerned with the design of systems to produce goods and services and the operation of those systems. Explore relationships within business with an emphasis on ordering and distribution systems.
10182122 Principles of Distribution and Logistics (3 cr.)	Introduces the foundations of planning and control in distribution and logistics. Explore the basics of logistics management, designing supply and distribution channels, and the principles and activities of warehousing and transportation management. Through discussion and problem solving, participants will learn about the role of logistics in supply chain management.
10182123 Supply Chain Career Exploration (1 cr.)	Acquaints students with career options and related job skills, salaries and employment trends in the Supply Chain field. Familiarizes them with the different aspects that make up the supply chain and the various career path options.
10182130 Supply Chain Management Capstone (3 cr.)	Is a program capstone course that will apply foundational concepts from prior work in operations, inventory/procurement, and logistics/distribution to (1) understanding ERP system functionality; (2) analyzing data; (3) evaluating costs and benefits of cross-functional trade-offs; (4) applying solutions, (5) measuring outcomes; and (6) recommending improvements.
10182131 Fundamentals of Supply Chain Management (3 cr.)	Introduces the key concepts of supply chain management. Students learn tips, techniques, and best practices in supply chain operations. Students will stay up to date on the newest thinking, strategies, developments, and technologies in supply chain management.

Course Descriptions

10182138 Purchasing Fundamentals (3 cr.)	In this course, students will explore the impact of purchasing activities on the success and profitability of the organization, and consider the demands made on purchasing by various internal and external stakeholders. Activities include the purchasing process, tactical purchasing versus strategic procurement, strategic sourcing, supplier development and maintenance. Students will also explore contractual, ethical, legal, risk management, and sustainability issues faced by today's purchasing professionals.
10196110 Cost Controls and Budgeting (3 cr.)	Examines how financial information is interpreted and applied by supervisors/managers in planning and controlling business activities. This managerial accounting course emphasizes the budgeting process.
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
10804123 Math w Business Apps (3 cr.)	This course integrates algebraic concepts, proportions, percents, simple interest, compound interest, annuities, and basic statistics with business/consumer scenarios. It also applies math concepts to the purchasing/buying and selling processes.
10809195 Economics (3 cr.)	This course is designed to give an overview of microeconomics, macroeconomics, and international economics. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues.
10809199 Psychology of Human Relations (3 cr.)	Explores the relationship between the general principles of psychology and our everyday lives. Students are given the opportunity to achieve a deepened sense of awareness of themselves and others. This understanding enables students to improve their relationships with others at work, in the family, and in society.

182 - Logistics & Material Supply Chain Operations Specialist

Course Descriptions

10182118 Principles of Inventory Management (3 cr.)

Provides an operational knowledge and understanding of inventory management principles and techniques, sourcing strategies, the fundamental role of purchasing, purchase order management, ordering and stocking techniques, roles and responsibilities, and the impact inventory has on a business. The course provides practical examples and exercises, giving participants an opportunity to learn and practice inventory management techniques and concepts.

10182119 Principles of Operations Planning (3 cr.)

Provides a fundamental knowledge and understanding of the basic inventory planning principles and techniques that are used at each level in the planning process, from strategic to tactical. The course provides practical examples and exercises, giving participants an opportunity to practice and enhance their own planning skills.

10182120 Principles of Manufacturing Management (3 cr.)

Introduces the manufacturing environment and key manufacturing planning and control activities including material requirements planning, capacity management, capacity requirements planning, and lean manufacturing environments. Through discussion and interactive problem solving participants will gain a functional competency of production activity control and management.

10182121 Principles of Managing Operations (3 cr.)

Focuses on the systems, information technologies, and process management tools involved in designing and operating the manufacturing and distribution environment. This course is concerned with the design of systems to produce goods and services and the operation of those systems. Explore relationships within business with an emphasis on ordering and distribution systems.

10182122 Principles of Distribution and Logistics (3 cr.)

Introduces the foundations of planning and control in distribution and logistics. Explore the basics of logistics management, designing supply and distribution channels, and the principles and activities of warehousing and transportation management. Through discussion and problem solving, participants will learn about the role of logistics in supply chain management.

10182123 Supply Chain Career Exploration (1 cr.)

Acquaints students with career options and related job skills, salaries and employment trends in the Supply Chain field. Familiarizes them with the different aspects that make up the supply chain and the various career path options.

Course Descriptions

10182138 Purchasing Fundamentals (3 cr.) In this course, students will explore the impact of purchasing activities on the success and profitability of the organization, and consider the demands made on purchasing by various internal and external stakeholders. Activities include the purchasing process, tactical purchasing versus strategic procurement, strategic sourcing, supplier development and maintenance. Students will also explore contractual, ethical, legal, risk management, and sustainability issues faced by today's purchasing professionals.

196 - Supervision & Leadership Advanced Organizational Leadership

10104151 Marketing 1, Principles of (3 cr.) Introduces students to the marketing function and process. Techniques for analyzing the marketing environment and understanding customers' needs and wants are explored. Students apply marketing principles to select target markets, develop positioning and create marketing programs to serve markets. Topics include product management and development, pricing, distribution and promotion strategies.

10196110 Cost Controls and Budgeting (3 cr.) Examines how financial information is interpreted and applied by supervisors/managers in planning and controlling business activities. This managerial accounting course emphasizes the budgeting process.

10196139 Employee Training and Development (3 cr.) Identifies training and development skills through practice and skill-building activities. This course focuses on the role of training in the development of facilitation skills, using recognized training methods, and evaluating learning and training processes.

10801195 Written Communication (3 cr.) Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.

10804123 Math w Business Apps (3 cr.) This course integrates algebraic concepts, proportions, percents, simple interest, compound interest, annuities, and basic statistics with business/consumer scenarios. It also applies math concepts to the purchasing/buying and selling processes.

196 - Supervision & Leadership Basic Organizational Leadership

10102112 Business, Introduction to (3 cr.) Provides an overview of the variety of activities in the world of business. It focuses on the responsibilities connected with operating a business from both organizational and managerial viewpoints. It also examines the role of government in business.

Course Descriptions

10116193 Human Resources, Introduction to (3 cr.)	Covers human resources planning and processes. Topics include human resource development, employee selection, performance appraisals, compensation, training, labor relations, motivation, teamwork and introduces employment related laws.
10196190 Leadership Development (3 cr.)	Covers the supervisor's role in leadership effectiveness. Topics include theories of leadership, development and implementation of teams, impact of leadership style, philosophy of corporate culture and leadership in the global marketplace.
10196191 Supervision (3 cr.)	Uses a practical approach to training people in the basics of supervision and management. This course emphasizes the application of theory and covers management functions, the skills needed to perform those functions, the history of management, contemporary management trends, ethics, communication and total quality management.
10196192 Managing for Quality (3 cr.)	Applies the skills and tools necessary to implement and maintain a continuous improvement environment. Each learner will demonstrate the application of a personal philosophy of quality, identifying all stakeholder relationships, meeting/exceeding customer expectations, a systems-focused approach, using appropriate models and tools, managing a quality improvement project and measuring effectiveness of continuous improvement activities.
196 - Supervision & Leadership Management Development (Leadership 10102112 Business, Introduction to (3 cr.)	Provides an overview of the variety of activities in the world of business. It focuses on the responsibilities connected with operating a business from both organizational and managerial viewpoints. It also examines the role of government in business.
10104151 Marketing 1, Principles of (3 cr.)	Introduces students to the marketing function and process. Techniques for analyzing the marketing environment and understanding customers' needs and wants are explored. Students apply marketing principles to select target markets, develop positioning and create marketing programs to serve markets. Topics include product management and development, pricing, distribution and promotion strategies.
10116105 Employee and Labor Relations (3 cr.)	Explores employee relations efforts in both unionized and non-union organizations.
10116193 Human Resources, Introduction to (3 cr.)	Covers human resources planning and processes. Topics include human resource development, employee selection, performance appraisals, compensation, training, labor relations, motivation, teamwork and introduces employment related laws.

Course Descriptions

10196108 Contemporary Business Issues (3 cr.)	Provides the skills and tools necessary to enhance professional success related to contemporary business issues and challenges of a manager/supervisor. Learners will demonstrate the application of professionalism, business communication and ethics, conceptual skills, critical thinking skills and contemporary workplace issues.
10196110 Cost Controls and Budgeting (3 cr.)	Examines how financial information is interpreted and applied by supervisors/managers in planning and controlling business activities. This managerial accounting course emphasizes the budgeting process.
10196121 Safety, Principles of (2 cr.)	Explains the supervisor's role in developing and implementing safety procedures and accident prevention programs in all types of work environments. It includes ergonomics, office safety, health care costs and Occupational Safety and Health Administration (OSHA) standards.
10196131 Problem Solving (2 cr.)	Presents basic problem-solving techniques. Emphasizes the importance of identifying the real problem, identifying the causes, looking at alternative solutions, arriving at a solution and following up to ensure implementation.
10196139 Employee Training and Development (3 cr.)	Identifies training and development skills through practice and skill-building activities. This course focuses on the role of training in the development of facilitation skills, using recognized training methods, and evaluating learning and training processes.
10196171 Management Development Field Study (1 cr.)	Provides an opportunity for students to participate in an in-depth study/work experience specific to the Management Development program. All projects, study topics and work experience will be approved and evaluated by the course instructor.
10196190 Leadership Development (3 cr.)	Covers the supervisor's role in leadership effectiveness. Topics include theories of leadership, development and implementation of teams, impact of leadership style, philosophy of corporate culture and leadership in the global marketplace.
10196191 Supervision (3 cr.)	Uses a practical approach to training people in the basics of supervision and management. This course emphasizes the application of theory and covers management functions, the skills needed to perform those functions, the history of management, contemporary management trends, ethics, communication and total quality management.

Course Descriptions

- 10196192 Managing for Quality (3 cr.)** Applies the skills and tools necessary to implement and maintain a continuous improvement environment. Each learner will demonstrate the application of a personal philosophy of quality, identifying all stakeholder relationships, meeting/exceeding customer expectations, a systems-focused approach, using appropriate models and tools, managing a quality improvement project and measuring effectiveness of continuous improvement activities.
- 10623195 Lean Tools (2 cr.)** Introduces useful tools to use when implementing Lean in your organization. Major course topics include team building, lean tools and project management.
- 10801195 Written Communication (3 cr.)** Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
- 10801196 Oral/Interpersonal Comm (3 cr.)** Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
- 10804123 Math w Business Apps (3 cr.)** This course integrates algebraic concepts, proportions, percents, simple interest, compound interest, annuities, and basic statistics with business/consumer scenarios. It also applies math concepts to the purchasing/buying and selling processes.
- 10809172 Introduction to Diversity Studies (3 cr.)** This course introduces the study of diversity from a local to a global perspective using a holistic, interdisciplinary approach that encourages exploration and prepares students to work in a diverse environment. The course introduces basic diversity concepts, examines the impact of bias and power differentials among groups, explores the use of culturally responsive communication strategies, and compares forces that shape diversity in an international context.
- 10809195 Economics (3 cr.)** This course is designed to give an overview of microeconomics, macroeconomics, and international economics. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues.

Course Descriptions

10809196 Intro to Sociology (3 cr.)

Introduces students to the fundamental sociological concepts, including sociological perspectives, research methods, the significance of culture in society, and the socialization process. Other topics include deviance, the impact of groups on behavior, societal inequities, global changes, the role of social institutions, and social stratification.

10809198 Intro to Psychology (3 cr.)

This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.

196 - Supervision & Leadership Nonprofit Leadership

10102103 Business Law 1 (3 cr.)

Introduces legal principles and standard business law concepts and their implications for business. It emphasizes contracts, sales, commercial paper, bailment, agency and real property, with references to the Uniform Commercial Code and recent consumer legislation.

10116193 Human Resources, Introduction to (3 cr.)

Covers human resources planning and processes. Topics include human resource development, employee selection, performance appraisals, compensation, training, labor relations, motivation, teamwork and introduces employment related laws.

10196116 Nonprofit Leadership Capstone (3 cr.)

Combining personal experience, competencies gained in the Nonprofit Leadership Institute, and successful completion of required assessment tools in the certificate, this course is designed to measure the student's ability to demonstrate the skills required of an executive director, development director, or operations director. Students are required to complete this course after all other required courses in the certificate are successfully completed.

10196190 Leadership Development (3 cr.)

Covers the supervisor's role in leadership effectiveness. Topics include theories of leadership, development and implementation of teams, impact of leadership style, philosophy of corporate culture and leadership in the global marketplace.

303 - Food Service Production

10109152 Introduction to Hospitality (3 cr.)

Introduces various aspects of the hospitality industry including lodging, food service, tourism and customer service. Students evaluate potential internship and career opportunities as they explore topics including professionalism, ethics & etiquette.

10316110 Culinary Fundamentals (3 cr.)

Applies the basic principles involved in the purchase, preparation and use of food stuffs. The proper identification and use of equipment and correct measuring techniques are covered. This course provides the theory basis for production courses.

Course Descriptions

10316118 Sanitation for Food Service Operations (1 cr.)	Focuses on the development of skills to follow sanitation and hygiene provisions in state codes. The Servsafe certification test is included.
10316119 Nutrition for Culinary Arts (1 cr.)	Focuses on the six major nutrients (carbohydrates, proteins, fats, minerals, vitamins and water) and how each is used by the body. The planning of well-balanced diets and the nutritional analysis of diets are emphasized.
10316120 Culinary Applications (2 cr.)	Applies the basic principles of culinary calculations involved in the purchase, preparation and use of goods related to the hospitality field.
10316121 Baking Basics (2 cr.)	Introduces baking skills learned through the production of a variety of pastries including quick breads, cookies, cakes, yeast breads, pate a choux, and meringues. Proficiency will be demonstrated through production and use of equipment and ingredients.
10316122 Baking Techniques (2 cr.)	Learn foundational baking techniques including tarts, pies, cakes, laminated doughs, custards, and sauces learned through production. Use of equipment and ingredients to create specific items will demonstrate proficiency. Presentation of baked goods and pastries is emphasized.
10316125 Culinary Foundations (1 cr.)	Prepares the entry-level culinary student for future success by introducing knife skills development, cooking principles and methods, and organizational skills and Mise en place (French phrase meaning "œput in place" as in set up). Emphasis is placed on hands-on learning and skills development.
10316133 Meat Identification (1 cr.)	Focuses on the federal program for meat and fish inspection. Meat grading classification (commercial and institutional) and purchasing are discussed. This course also provides practical lessons in meat preparation.
10316136 Quantity Cooking (4 cr.)	Introduces quantity food preparation procedures with emphasis in braising, stewing, simmering, roasting, baking, soup, stock and sauce making. Practical experience is given in restaurant, banquet, and cafeteria food presentation techniques. Identification of an assortment of grains, legumes, potatoes, and farinaceous products bring variety to menu planning.
10316137 Short Order Cooking (4 cr.)	Provides hands-on experience in all phases of short order techniques. Students use various methods to prepare eggs, omelets, pancakes, and other breakfast items. Lunch cooking introduces the use of fryers, grills, ovens and steamers. Service experience includes line work and practical applications of salads, salad dressings, and greens

Course Descriptions

- 10531101 First Aid/CPR, Principles and Practices (1 cr.)** Presents and evaluates basic first aid skills necessary to care for the ill and injured until medical help arrives. Covers the use of an Automated External Defibrillator (AED), as well as CPR for all ages and the recognition and care of cardiac emergencies. Students receive an AHA Healthcare CPR card and a FVTC First Aid certificate upon course completion.
- 10801195 Written Communication (3 cr.)** Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
- 10804123 Math w Business Apps (3 cr.)** This course integrates algebraic concepts, proportions, percents, simple interest, compound interest, annuities, and basic statistics with business/consumer scenarios. It also applies math concepts to the purchasing/buying and selling processes.

303 - Institutional Food Production

- 10316100 Culinary Internship (2 cr.)** Provides the culinary student the opportunity to investigate and learn through structured, hands-on experiences in the food service industry. It is specifically required that the learner be working in a food service establishment where tickets are generated and food is prepared to order.
- 10316118 Sanitation for Food Service Operations (1 cr.)** Focuses on the development of skills to follow sanitation and hygiene provisions in state codes. The Servsafe certification test is included.
- 10316120 Culinary Applications (2 cr.)** Applies the basic principles of culinary calculations involved in the purchase, preparation and use of goods related to the hospitality field.
- 10316121 Baking Basics (2 cr.)** Introduces baking skills learned through the production of a variety of pastries including quick breads, cookies, cakes, yeast breads, pate a choux, and meringues. Proficiency will be demonstrated through production and use of equipment and ingredients.
- 10316136 Quantity Cooking (4 cr.)** Introduces quantity food preparation procedures with emphasis in braising, stewing, simmering, roasting, baking, soup, stock and sauce making. Practical experience is given in restaurant, banquet, and cafeteria food presentation techniques. Identification of an assortment of grains, legumes, potatoes, and farinaceous products bring variety to menu planning.

304 - Housing & Home Interior Design

- 10304110 Fundamentals of Design (3 cr.)** Provides a foundation in the principles and elements of design. The understanding of good design, taste and creativity is stressed in student projects. Students use their projects in a design show.

Course Descriptions

10304125 Basic Interior Design (3 cr.)	Focuses on the basic elements, materials, and mathematics of interior design. Topics include furniture arranging and the treatment of windows, walls and floors.
10304127 Color Theory (3 cr.)	Explores the basic principles of color. Color harmonies are correlated with practical problems as they apply to interior design. Students present their plans, selection of furnishings and colors for group discussion and critique.
10304128 Commercial CAD (2 cr.)	Introduces the principles of computer-aided design and planning. Students develop floor plans and design workstations and open office systems.
10304129 Textiles (3 cr.)	Studies textiles as they appear in interiors, taking the student from fiber to fabric. Topics include fibers, yarns, fabric construction, finishes and decorating techniques. Emphasis is on selection, care, use and textile legislation as related to the field of interior design.
10304134 Advanced Interior Design (2 cr.)	Introduces advanced techniques for the design and calculation of draperies, bedding, kitchen and bath projects using workroom forms and computerized drawings.
10304135 Business Principles for Interior Design (1 cr.)	Presents the business aspects of a career in interior design. Topics include business forms, billing procedures and business setup.
10304143 Design Applications (3 cr.)	Applies previous course learning experiences to hypothetical residential and commercial design problems. Board layouts and oral presentations accompany each solution.
10304144 History of Furniture (3 cr.)	Examines the history of art, architecture and furnishings from early Egypt through the Western World of the 20th century. Special attention is given to European court styles and the decorative arts of Colonial America.
10304150 Computer Basics for Design (1 cr.)	Introduces the student to current Interior Design software used to create effective client presentations and professional portfolios. Students will get an overview of software used for 3D rendering, photo editing and presentation layouts.
10304154 Construction Applications - Mechanical & Lighting (3 cr.)	Demonstrates knowledge of standard building terms, mechanical, electrical, plumbing, heating and cooling systems. Students will become aware of communication with the trades, building changes as they relate to cost and specify materials to satisfy design criteria.
10304166 Presentation Techniques (3 cr.)	Introduces the student to a variety of techniques used in design communication. The student will learn and practice perspective drawing, illustration techniques and board layout styles. Good interior design requires adequate and appropriate methods of communication and presentation.
10304167 Drafting Skills for Interiors (3 cr.)	Introduces the techniques and language of architectural drafting and construction. Basic floor plan and elevation drafting is practiced.

Course Descriptions

- 10304171 Internship 1 Interior Design (3 cr.)** Provides students the use of skills gained through courses and related laboratory experiences. These courses provide the opportunities to test their philosophy and theories, to make use of facts, knowledge, materials, to develop and refine skills and techniques while participating in the area's business under the close supervision of experienced supervising instructors.
- 10304174 Introduction to Commercial Design (3 cr.)** Introduces the design, specification and documentation of commercial interiors. Provides students with knowledge of space planning, programming, office furnishings, finishes and materials, lighting, codes, building systems, sustainability and client presentation. Students develop CAD skills by producing documentation and furniture plans.
- 10801195 Written Communication (3 cr.)** Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
- 10801196 Oral/Interpersonal Comm (3 cr.)** Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
- 10804123 Math w Business Apps (3 cr.)** This course integrates algebraic concepts, proportions, percents, simple interest, compound interest, annuities, and basic statistics with business/consumer scenarios. It also applies math concepts to the purchasing/buying and selling processes.
- 10809166 Intro to Ethics: Theory & App (3 cr.)** This course provides a basic understanding of the theoretical foundations of ethical thought. Diverse ethical perspectives will be used to analyze and compare relevant issues. Students will critically evaluate individual, social and professional standards of behavior, and apply a systematic decision-making process to these situations.
- 10809195 Economics (3 cr.)** This course is designed to give an overview of microeconomics, macroeconomics, and international economics. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues.

Course Descriptions

10809199 Psychology of Human Relations (3 cr.)

Explores the relationship between the general principles of psychology and our everyday lives. Students are given the opportunity to achieve a deepened sense of awareness of themselves and others. This understanding enables students to improve their relationships with others at work, in the family, and in society.

304 - Housing & Home Interior Design - Kitchen & Bath Design

10304110 Fundamentals of Design (3 cr.)

Provides a foundation in the principles and elements of design. The understanding of good design, taste and creativity is stressed in student projects. Students use their projects in a design show.

10304125 Basic Interior Design (3 cr.)

Focuses on the basic elements, materials, and mathematics of interior design. Topics include furniture arranging and the treatment of windows, walls and floors.

10304127 Color Theory (3 cr.)

Explores the basic principles of color. Color harmonies are correlated with practical problems as they apply to interior design. Students present their plans, selection of furnishings and colors for group discussion and critique.

10304143 Design Applications (3 cr.)

Applies previous course learning experiences to hypothetical residential and commercial design problems. Board layouts and oral presentations accompany each solution.

10304144 History of Furniture (3 cr.)

Examines the history of art, architecture and furnishings from early Egypt through the Western World of the 20th century. Special attention is given to European court styles and the decorative arts of Colonial America.

10304153 Basic Kitchen and Bath (3 cr.)

Provides students with the understanding of design elements and principles for kitchen and bath, including functions of the kitchen and bath as it relates to the house and its occupants. Application and knowledge of the NKBA Planning Guidelines, including assessment, measurement, product selection and communication of design will be introduced and applied to projects.

10304154 Construction Applications - Mechanical & Lighting (3 cr.)

Demonstrates knowledge of standard building terms, mechanical, electrical, plumbing, heating and cooling systems. Students will become aware of communication with the trades, building changes as they relate to cost and specify materials to satisfy design criteria.

10304155 Business Procedures for Designers (3 cr.)

Includes demonstration of ethical business practices, including the NKBA standards of conduct and NKBA business contracts, business tools and forms. Students will have an understanding of management policies, including profit margin, business plan development, HR practices, marketing and advertising.

Course Descriptions

10304156 Advanced Kitchen & Bath Design (3 cr.)	Approaches solutions to advanced knowledge of NKBA Planning Guidelines. Course work will include universal design projects, mastery of solving problems, developing concept and theme design, producing professional working documents according to the NKBA Graphic and Presentation Standards. Students will produce floor plans, elevations, mechanical and construction drawings.
10304157 Materials & Estimating (3 cr.)	Utilizes knowledge of appropriate cabinetry, appliances, ventilation, decorative plumbing and hardware, including surface and decorative materials. Students will competently research, estimate, recommend and order materials using product specification sheets.
10304166 Presentation Techniques (3 cr.)	Introduces the student to a variety of techniques used in design communication. The student will learn and practice perspective drawing, illustration techniques and board layout styles. Good interior design requires adequate and appropriate methods of communication and presentation.
10304167 Drafting Skills for Interiors (3 cr.)	Introduces the techniques and language of architectural drafting and construction. Basic floor plan and elevation drafting is practiced.
10304176 Internship - Kitchen & Bath (3 cr.)	Provides students the use of skills gained through courses and related laboratory experiences. These courses provide the opportunities to test their philosophy, creativity, and theories, to make use of facts, knowledge and materials and to develop and refine skills and techniques while participating in the K&B business under the close supervision of experienced designers and qualified supervising instructors.
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
10804123 Math w Business Apps (3 cr.)	This course integrates algebraic concepts, proportions, percents, simple interest, compound interest, annuities, and basic statistics with business/consumer scenarios. It also applies math concepts to the purchasing/buying and selling processes.

Course Descriptions

**10809166 Intro to Ethics: Theory & App
(3 cr.)**

This course provides a basic understanding of the theoretical foundations of ethical thought. Diverse ethical perspectives will be used to analyze and compare relevant issues. Students will critically evaluate individual, social and professional standards of behavior, and apply a systematic decision-making process to these situations.

10809195 Economics (3 cr.)

This course is designed to give an overview of microeconomics, macroeconomics, and international economics. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues.

**10809199 Psychology of Human
Relations (3 cr.)**

Explores the relationship between the general principles of psychology and our everyday lives. Students are given the opportunity to achieve a deepened sense of awareness of themselves and others. This understanding enables students to improve their relationships with others at work, in the family, and in society.

304 - Housing & Home Interior Design Entrepreneurship

**10101104 QuickBooks Accounting
Online (2 cr.)**

Lays the foundation for students to gain experience using QuickBooks Pro. Students practice creating a company using a chart of accounts, creating vendors and customers, demo payroll, record transactions, and generate and use financial reports. Being familiar with Windows, business experience or completion of an accounting course is helpful. Upon completion of this course, students are eligible to take the QuickBooks Certification exam.

**10145104 Entrepreneurship,
Introduction to (3 cr.)**

Provides students with opportunities to investigate, understand and apply the process of choosing entrepreneurship as a career path. Explores the entrepreneurial experience by focusing on an awareness of entrepreneurship, opportunity recognition, business concept development and preliminary feasibility testing. Students gain the knowledge, skills, concepts and strategies relevant for start-up and early-stage entrepreneurs. The practical hands-on approach encourages students to immerse themselves in the entrepreneurial experience.

**10304155 Business Procedures for
Designers (3 cr.)**

Includes demonstration of ethical business practices, including the NKBA standards of conduct and NKBA business contracts, business tools and forms. Students will have an understanding of management policies, including profit margin, business plan development, HR practices, marketing and advertising.

304 - Housing & Home Kitchen & Bath Design Assistant

Course Descriptions

10304127 Color Theory (3 cr.)	Explores the basic principles of color. Color harmonies are correlated with practical problems as they apply to interior design. Students present their plans, selection of furnishings and colors for group discussion and critique.
10304153 Basic Kitchen and Bath (3 cr.)	Provides students with the understanding of design elements and principles for kitchen and bath, including functions of the kitchen and bath as it relates to the house and its occupants. Application and knowledge of the NKBA Planning Guidelines, including assessment, measurement, product selection and communication of design will be introduced and applied to projects.
10304154 Construction Applications - Mechanical & Lighting (3 cr.)	Demonstrates knowledge of standard building terms, mechanical, electrical, plumbing, heating and cooling systems. Students will become aware of communication with the trades, building changes as they relate to cost and specify materials to satisfy design criteria.
10304155 Business Procedures for Designers (3 cr.)	Includes demonstration of ethical business practices, including the NKBA standards of conduct and NKBA business contracts, business tools and forms. Students will have an understanding of management policies, including profit margin, business plan development, HR practices, marketing and advertising.
10304156 Advanced Kitchen & Bath Design (3 cr.)	Approaches solutions to advanced knowledge of NKBA Planning Guidelines. Course work will include universal design projects, mastery of solving problems, developing concept and theme design, producing professional working documents according to the NKBA Graphic and Presentation Standards. Students will produce floor plans, elevations, mechanical and construction drawings.
10304157 Materials & Estimating (3 cr.)	Utilizes knowledge of appropriate cabinetry, appliances, ventilation, decorative plumbing and hardware, including surface and decorative materials. Students will competently research, estimate, recommend and order materials using product specification sheets.
10304166 Presentation Techniques (3 cr.)	Introduces the student to a variety of techniques used in design communication. The student will learn and practice perspective drawing, illustration techniques and board layout styles. Good interior design requires adequate and appropriate methods of communication and presentation.
10304167 Drafting Skills for Interiors (3 cr.)	Introduces the techniques and language of architectural drafting and construction. Basic floor plan and elevation drafting is practiced.

Course Descriptions

10304176 Internship - Kitchen & Bath (3 cr.) Provides students the use of skills gained through courses and related laboratory experiences. These courses provide the opportunities to test their philosophy, creativity, and theories, to make use of facts, knowledge and materials and to develop and refine skills and techniques while participating in the K&B business under the close supervision of experienced designers and qualified supervising instructors.

307 - Early Childhood Assistant Teacher

10307108 ECE: Early Language & Literacy (3 cr.) This 3-credit course explores strategies to encourage the development of early language and literacy knowledge and skill building in children birth to 8 years of age.

10307110 ECE: Social Studies, Art, & Music (3 cr.) This 3-credit course will focus on beginning level curriculum development in the specific integrated content areas of social studies, art, music, & movement (SSAMM) for children from birth to 8 years of age.

10307151 ECE: Infant & Toddler Development (3 cr.) This 3-credit course explores infant and toddler development as it applies to an early childhood education setting. This course focuses on children's development from conception through thirty-six months (3 years). This course includes training for Wisconsin Breastfeeding Friendly Child Care certification.

10307167 ECE: Hlth Safety & Nutrition (3 cr.) This 3-credit course examines the topics of health, safety, and nutrition within the context of the early childhood educational setting for children from birth through 8 years of age. This course includes training for Abusive Head Trauma, SIDS, and Mandated Reporter certifications.

10307179 ECE: Child Development (3 cr.) This 3-credit course examines child development within the context of the early childhood education setting. This course focuses on children ages 3-8 years of age.

10307188 ECE: Guiding Child Behavior (3 cr.) This 3-credit course examines positive strategies to guide children's behavior in the early childhood education setting for children from birth to 8 years of age. This course meets the requirements of the Wisconsin Pyramid Model training.

307 - Early Childhood Child Care Administrator

10307181 ECE: Child Care Operations Management (3 cr.) Includes discussion and practical applications related to scheduling, staffing, facilities management, equipment acquisition and maintenance, service delivery, maintaining records and communication. Must be a lead teacher or program director.

10307182 ECE: Child Care Financial Management (3 cr.) Includes a review of principles and practices of budget planning, budget preparation and fiscal management. Must be a lead teacher or program director.

Course Descriptions

10307184 ECE: Child Care External Environment (3 cr.)

Examines the external factors and relationships which affect early childhood program quality and ability to flourish. Content includes how to conduct surveys, basic marketing principles, licensing and accreditation requirements, collaboration with other organizations, developing funding resources, advocacy, and working for and with change. Must be a lead teacher or program director.

10307185 ECE: Child Care Best Practices (3 cr.)

Includes information for establishing and maintaining quality programs based on professional standards and using the best available information on child growth and development in order to provide a family friendly service. Must be a lead teacher or program director.

10307186 ECE: Child Care Administrator Capstone (3 cr.)

An advanced course in the six-course series required to receive a credential as a childcare administrator from The Registry and/or a certificate in childcare administration from FVTC. Major individual projects are required with a focus on integration of program aspects in developing strategies planning for change.

10307204 Supervise/Admin ECE Programs (3 cr.)

Prepares participants to receive a certificate in childcare administration from FVTC and a credential as a childcare administrator from the Registry. This course includes an overview of the roles and responsibilities of directors, coordinators, supervisors and other administrators in early childhood programs. Must be a lead teacher or program director.

307 - Early Childhood Early Childhood Education

10307108 ECE: Early Language & Literacy (3 cr.)

This 3-credit course explores strategies to encourage the development of early language and literacy knowledge and skill building in children birth to 8 years of age.

10307110 ECE: Social Studies, Art, & Music (3 cr.)

This 3-credit course will focus on beginning level curriculum development in the specific integrated content areas of social studies, art, music, & movement (SSAMM) for children from birth to 8 years of age.

10307112 ECE: STEM (3 cr.)

This 3-credit course will focus on beginning level curriculum development in the specific integrated content areas of science, technology, engineering and mathematics (STEM) in children birth to age 8.

10307148 ECE: Foundations of Early Childhood (3 cr.)

This 3-credit course introduces the early childhood profession through a historical overview of the field. The course will explore program trends, quality indicators, and developmentally appropriate practices for children birth to 8 years of age.

Course Descriptions

10307151 ECE: Infant & Toddler Development (3 cr.)	This 3-credit course explores infant and toddler development as it applies to an early childhood education setting. This course focuses on children's development from conception through thirty-six months (3 years). This course includes training for Wisconsin Breastfeeding Friendly Child Care certification.
10307160 ECE: Field Experience 1 (3 cr.)	This 3-credit introductory field experience course introduces the foundations of early childhood education under guided supervision of a mentor teacher in an early childhood setting, working with children birth through age 8. This course meets the requirements for the Wisconsin Model Early Learning Standards 18-hour training.
10307167 ECE: Hlth Safety & Nutrition (3 cr.)	This 3-credit course examines the topics of health, safety, and nutrition within the context of the early childhood educational setting for children from birth through 8 years of age. This course includes training for Abusive Head Trauma, SIDS, and Mandated Reporter certifications.
10307170 ECE: Field Experience 2 (3 cr.)	This 3-credit intermediate field experience course includes assisting the mentor teacher in carrying out classroom routines and implementing developmentally appropriate learning experiences that promote child development and learning through play for children birth to age 8.
10307179 ECE: Child Development (3 cr.)	This 3-credit course examines child development within the context of the early childhood education setting. This course focuses on children ages 3-8 years of age.
10307187 ECE: Children w Diff Abilities (3 cr.)	This 3-credit course focuses on the child with differing abilities in an inclusive early childhood education setting while examining strategies for cultivating partnerships with families and community supports for children from birth to 8 years of age.
10307188 ECE: Guiding Child Behavior (3 cr.)	This 3-credit course examines positive strategies to guide children's behavior in the early childhood education setting for children from birth to 8 years of age. This course meets the requirements of the Wisconsin Pyramid Model training.
10307190 ECE: Field Experience 3 (3 cr.)	This 3-credit advanced field experience course focuses on supporting young children's development birth to age 8 through observation, assessment, and implementation of developmentally appropriate teaching strategies.
10307195 ECE: Family & Community Relationships (3 cr.)	This 3-credit course will examine the role of relationships with family and community in early childhood education for children from birth to 8 years of age. In this course, students will complete the Strengthening Families Training.
10307210 ECE: Field Experience 4 (3 cr.)	This final 3-credit pre-professional field experience course focuses on demonstrating a comprehensive understanding of children birth to age 8, and families. An emphasis is on practicing the lead teacher role to design, implement and evaluate a connected unit of learning experiences.

Course Descriptions

10801195 Written Communication (3 cr.) Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.

10801198 Speech (3 cr.) Explores the fundamentals of effective oral presentation to small and large groups. Topic selection, audience analysis, methods of organization, research, supporting evidence, delivery techniques, active listening, and other essential elements of speaking successfully, form the basis of the course. Includes informative, persuasive, and occasion speech presentations. Audience requirements to be determined by the individual colleges.

10806112 Principles of Sustainability (3 cr.) Prepares the student to develop sustainable literacy, analyze the interconnections among the physical and biological sciences and environmental systems, summarize the effects of sustainability on health and well-being, analyze connections among social, economic, and environmental systems, employ energy conservation strategies to reduce the use of fossil fuels, investigate alternative energy options, evaluate options to current waste disposal and recycling in the U.S., and analyze approaches used by your community to promote and implement sustainability.

10809196 Intro to Sociology (3 cr.) Introduces students to the fundamental sociological concepts, including sociological perspectives, research methods, the significance of culture in society, and the socialization process. Other topics include deviance, the impact of groups on behavior, societal inequities, global changes, the role of social institutions, and social stratification.

10809198 Intro to Psychology (3 cr.) This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.

307 - Early Childhood Early Childhood Educator Apprentice

10307108 ECE: Early Language & Literacy (3 cr.)

This 3-credit course explores strategies to encourage the development of early language and literacy knowledge and skill building in children birth to 8 years of age.

10307148 ECE: Foundations of Early Childhood (3 cr.)

This 3-credit course introduces the early childhood profession through a historical overview of the field. The course will explore program trends, quality indicators, and developmentally appropriate practices for children birth to 8 years of age.

Course Descriptions

10307151 ECE: Infant & Toddler Development (3 cr.)

This 3-credit course explores infant and toddler development as it applies to an early childhood education setting. This course focuses on children's development from conception through thirty-six months (3 years). This course includes training for Wisconsin Breastfeeding Friendly Child Care certification.

10307167 ECE: Hlth Safety & Nutrition (3 cr.)

This 3-credit course examines the topics of health, safety, and nutrition within the context of the early childhood educational setting for children from birth through 8 years of age. This course includes training for Abusive Head Trauma, SIDS, and Mandated Reporter certifications.

10307179 ECE: Child Development (3 cr.)

This 3-credit course examines child development within the context of the early childhood education setting. This course focuses on children ages 3-8 years of age.

10307187 ECE: Children w Diff Abilities (3 cr.)

This 3-credit course focuses on the child with differing abilities in an inclusive early childhood education setting while examining strategies for cultivating partnerships with families and community supports for children from birth to 8 years of age.

10307188 ECE: Guiding Child Behavior (3 cr.)

This 3-credit course examines positive strategies to guide children's behavior in the early childhood education setting for children from birth to 8 years of age. This course meets the requirements of the Wisconsin Pyramid Model training.

10307195 ECE: Family & Community Relationships (3 cr.)

This 3-credit course will examine the role of relationships with family and community in early childhood education for children from birth to 8 years of age. In this course, students will complete the Strengthening Families Training.

307 - Early Childhood Early Childhood Teacher

10307108 ECE: Early Language & Literacy (3 cr.)

This 3-credit course explores strategies to encourage the development of early language and literacy knowledge and skill building in children birth to 8 years of age.

10307110 ECE: Social Studies, Art, & Music (3 cr.)

This 3-credit course will focus on beginning level curriculum development in the specific integrated content areas of social studies, art, music, & movement (SSAMM) for children from birth to 8 years of age.

10307148 ECE: Foundations of Early Childhood (3 cr.)

This 3-credit course introduces the early childhood profession through a historical overview of the field. The course will explore program trends, quality indicators, and developmentally appropriate practices for children birth to 8 years of age.

10307151 ECE: Infant & Toddler Development (3 cr.)

This 3-credit course explores infant and toddler development as it applies to an early childhood education setting. This course focuses on children's development from conception through thirty-six months (3 years). This course includes training for Wisconsin Breastfeeding Friendly Child Care certification.

Course Descriptions

10307160 ECE: Field Experience 1 (3 cr.)	This 3-credit introductory field experience course introduces the foundations of early childhood education under guided supervision of a mentor teacher in an early childhood setting, working with children birth through age 8. This course meets the requirements for the Wisconsin Model Early Learning Standards 18-hour training.
10307167 ECE: Hlth Safety & Nutrition (3 cr.)	This 3-credit course examines the topics of health, safety, and nutrition within the context of the early childhood educational setting for children from birth through 8 years of age. This course includes training for Abusive Head Trauma, SIDS, and Mandated Reporter certifications.
10307170 ECE: Field Experience 2 (3 cr.)	This 3-credit intermediate field experience course includes assisting the mentor teacher in carrying out classroom routines and implementing developmentally appropriate learning experiences that promote child development and learning through play for children birth to age 8.
10307179 ECE: Child Development (3 cr.)	This 3-credit course examines child development within the context of the early childhood education setting. This course focuses on children ages 3-8 years of age.
10307188 ECE: Guiding Child Behavior (3 cr.)	This 3-credit course examines positive strategies to guide children's behavior in the early childhood education setting for children from birth to 8 years of age. This course meets the requirements of the Wisconsin Pyramid Model training.
307 - Early Childhood Family Child Care	
10307135 Family Child Care Capstone (3 cr.)	Demonstrate the integration and application of specific concepts and skills of family child care including mixed-age curriculum, quality standards, professional development, community resources, health and wellness practices, family partnerships, and financial management. This capstone experience reflects the learner's knowledge of family child care through the development of a major project.
10307301 Introduction to Family Child Care (3 cr.)	Introduces family child care topics such as quality standards, health and wellness, child development, curriculum planning, guiding children's behavior, program wellness, and provider health and wellness. This course fulfills requirements for Department of Children and Families entry-level courses Fundamentals of Family Child Care and Introduction to the Child Care Profession.
10307302 Family Child Care: Responsive Programming (3 cr.)	Focuses on creating responsive family child care programming with an emphasis on building relationships and curriculum. Introduces important topics such as quality standards for relationships, intentional relationships, diversity and anti-bias perspectives, family partnerships, mixed age curriculum, learning environment indoor and outdoor.

Course Descriptions

10307303 FCC: Financial Management & Planning (3 cr.) Focuses on managing finances of a family child care with an emphasis on principles and practices for budget planning, budget preparation, and fiscal management. Introduces important topics such as quality standards for financial management and planning, business management, financial planning, record keeping, business budgets, marketing and financial management tools and systems.

307 - Early Childhood Infant and Toddler

10307115 Infant Toddler Capstone (3 cr.) Integrate theory, practice, and reflection of the first three Infant Toddler Credential courses and demonstrate best practices. Students will synthesize the information from the previous courses and demonstrate mastery of the competencies through the completion of a portfolio. Upon successful completion students are eligible to apply for the Wisconsin Registry Infant-Toddler Credential.

10307151 ECE: Infant & Toddler Development (3 cr.) This 3-credit course explores infant and toddler development as it applies to an early childhood education setting. This course focuses on children's development from conception through thirty-six months (3 years). This course includes training for Wisconsin Breastfeeding Friendly Child Care certification.

10307169 ECE: Infant Toddler Group Care (3 cr.) Focuses on caring for infants and toddlers in center based and family child care settings. Materials will cover program quality, philosophy, structure, environments, health and safety, developmentally appropriate practice, and inclusion/diversity issues.

10307195 ECE: Family & Community Relationships (3 cr.) This 3-credit course will examine the role of relationships with family and community in early childhood education for children from birth to 8 years of age. In this course, students will complete the Strengthening Families Training.

307 - Early Childhood Teacher's Aide (Career Pathway Certificate)

10307167 ECE: Hlth Safety & Nutrition (3 cr.) This 3-credit course examines the topics of health, safety, and nutrition within the context of the early childhood educational setting for children from birth through 8 years of age. This course includes training for Abusive Head Trauma, SIDS, and Mandated Reporter certifications.

10307179 ECE: Child Development (3 cr.) This 3-credit course examines child development within the context of the early childhood education setting. This course focuses on children ages 3-8 years of age.

307 - Early Childhood Understanding Autism Spectrum Disorder

10307130 Autism Spectrum Disorder (ASD cr.) - Introduction (1 cr.) Provides an overview of Autism Spectrum Disorder (ASD) and information to support individuals of the ASD. Focuses on ASD and how individuals and families may be impacted, and differentiates between typical development and atypical development associated with ASD.

Course Descriptions

10307131 Autism Spectrum Disorder, Social Integration (2 cr.) Identifies social skill issues; facilitate play skills; monitor behaviors; and create supportive learning and play environments for children with Autism Spectrum Disorder (ASD). It is recommended that course 10-307-130 ASD, Introduction be taken prior to taking this course.

10307132 Autism Spectrum Disorder, Teaching Methods (3 cr.) Familiarizes the learner with evidence based practices for working with children with ASD. Students will collect, record, and apply data; implement behavior plans; utilize technology to support instruction; facilitate development of basic life skills; and communicate effectively with families, professionals, and others in the community.

310 - Comprehensive Multi Occupational Aide Worker

47101416 DOC Personal Budgeting (0 cr.) Focuses on how to develop a personal budget. Topics include understanding wages, deductions, expenses and savings.

47106417 DOC Clerical Aide (2 cr.) Provides the student with the training necessary to become a clerical aide, including instruction in collating and copying material, and in filing, retrieving and delivering paper and electronic information.

47599400 DOC Health & Wellness (0 cr.) Focuses on how proper health and hygiene impact a person's employability and quality of life.

47801460 DOC Communication Skills (0 cr.) Focuses on communication skills as they relate to employability. This course addresses listening, interpreting, questioning and stating information.

47801461 DOC Direction Training (0 cr.) Focuses on how to give, receive, interpret and follow directions related to employment. Specific competencies related to each training site are reviewed.

47801462 DOC Conflict Resolution (0 cr.) Focuses on how to resolve conflicts that may come up in the day-to-day work environment.

47809460 DOC Cognitive Restructuring (0 cr.) Focuses on the issues of denial and resistance. The emphasis is on reducing dysfunctional behaviors and on providing the tools and strategies that promote an appreciation of individual patterns of thinking and their consequences. Critical thinking, problem solving and social skills are stressed.

47890460 DOC Employability Skills (0 cr.) Focuses on job seeking and job keeping skills. Areas of concentration include assessing skills, setting career goals, filling out job applications, improving telephone skills and developing a resume.

314 - Baking and Pastry Management

10109125 Hospitality Sales and Promotion (2 cr.) Covers sales and promotion in the hospitality industry. The emphasis is on promoting hospitality entities to attract new customers, selling principles and merchandising techniques for products and services, and innovative ways to maintain the interest of existing customers.

Course Descriptions

10109152 Introduction to Hospitality (3 cr.)	Introduces various aspects of the hospitality industry including lodging, food service, tourism and customer service. Students evaluate potential internship and career opportunities as they explore topics including professionalism, ethics & etiquette.
10314109 Artisan Breads and Rolls (2 cr.)	Offers an in-depth look at the production of breads and rolls. Learners study the principles involved in fermentation, mixing, scaling, proofing and baking. The following items are produced: artisan style breads and rolls, gluten-free breads, sour starters, bagels, pretzels, crackers, flat breads and multiple ethnic foods.
10314110 Baking Essentials (2 cr.)	Applies the basic principles involved in the purchase, preparation and use of food stuffs as it pertains to bakery and pastry. The proper identification and use of equipment, correct measuring techniques, and baker percentages are covered. Students will calculate math challenges using typical bakery scenarios.
10314111 Advanced Cake Decorating 1 (1 cr.)	Focuses on advanced methods of cake decorations through a multitude of mediums. The student will explore specialty cakes through production and learn of their history. There will also be a focus on the design process, structure, and color wheel using a variety of tools and materials.
10314112 Baking and Pastry Operations 1 (3 cr.)	Introduces basic concepts for front of house and back of house production and operations. The student run retail space will focus on customer service, equipment uses, production, and will showcase bakery items prepared by students.
10314113 Baking Industry Experience (1 cr.)	Provides the student the opportunity to investigate and learn through structured, hands-on experiences in the bakery and pastry industry out in the workforce with a mentor.
10314114 Plated Desserts (1 cr.)	Applies knowledge gained in pastry, confections, cakes, and specialty dessert methods to create composed plated desserts. Focuses on balancing flavors, textures, colors, and aromas while mastering plate composition, garnish, and sauces for classical, modern, restaurant, and competition style desserts.
10314115 Advanced Cake Decorating 2 (1 cr.)	Applies knowledge gained in Cake Production and Advanced Cake Decorating 1 to create multiple tiered and specialty cakes. Students will balance flavors, textures, colors, and aromas while mastering dimensional design and layout using a variety of tools and materials.
10314116 Chocolate (1 cr.)	Delves into everything chocolate, including the tempering process. Students learn about the handling and production of all types of chocolate, seasonal treats, modeling chocolate and chocolate sculpture.

Course Descriptions

10314117 Healthy and Natural Baking (1 cr.)	Takes students'™ knowledge of ingredients and their functions/properties and continues into recipe modification for a healthier and more natural outcome. The student will delve into special dietary needs through the production of baked goods.
10314118 Baking and Pastry Operations 2 (3 cr.)	Expands on Baking and Pastry Operations 1 for front of house and back of house. Moving forward in the retail space the student will continue with customer service, equipment use and production. The student will also have an emphasis on management, scheduling production and operations, costing, pricing, as well as order and inventory control.
10316101 Food Production, Introduction to (3 cr.)	Introduces quantity food production to the non-culinary student. Topics include preparation of a variety of menu items, equipment use, cooking methods and terminologies, recipe conversion and the essentials of timing and coordination of service.
10316118 Sanitation for Food Service Operations (1 cr.)	Focuses on the development of skills to follow sanitation and hygiene provisions in state codes. The Servsafe certification test is included.
10316119 Nutrition for Culinary Arts (1 cr.)	Focuses on the six major nutrients (carbohydrates, proteins, fats, minerals, vitamins and water) and how each is used by the body. The planning of well-balanced diets and the nutritional analysis of diets are emphasized.
10316120 Culinary Applications (2 cr.)	Applies the basic principles of culinary calculations involved in the purchase, preparation and use of goods related to the hospitality field.
10316121 Baking Basics (2 cr.)	Introduces baking skills learned through the production of a variety of pastries including quick breads, cookies, cakes, yeast breads, pate a choux, and meringues. Proficiency will be demonstrated through production and use of equipment and ingredients.
10316122 Baking Techniques (2 cr.)	Learn foundational baking techniques including tarts, pies, cakes, laminated doughs, custards, and sauces learned through production. Use of equipment and ingredients to create specific items will demonstrate proficiency. Presentation of baked goods and pastries is emphasized.
10316123 Hospitality Supervision (3 cr.)	Introduces fundamental management techniques including leadership styles; interpersonal skills; planning, organizing and decision-making processes, as well as interviewing, hiring, training and evaluating employees.
10316141 Food, Beverage and Labor Cost Controls (3 cr.)	Covers the concepts and techniques of controlling costs with particular emphasis placed on the cost-to-sales relationship. Students calculate the cost of goods, selling price and relative percentages. They also forecast sales, conduct yield analyses and calculate break-even points.

Course Descriptions

10316142 Catering and Special Event Planning (2 cr.)	Introduces how to develop, plan and execute catering and special events to the exacting details of the customer. Emphasis is on the importance of details in planning to achieve the best possible results. Activities will encourage both creative thinking and functionality to ensure customer satisfaction and business profitability.
10316170 Science of Baking (2 cr.)	Focuses on identifying, applying and interpreting the scientific concepts of the baking process. Topics include recipe conversion, scaling, measurement, baking terminology, equipment identification and use, timing, heat transfer, ingredient functionality, presentation and display. This course combines lab and lecture activities.
10316172 Cake Production (1 cr.)	Focuses on the production methods used in preparing a variety of cakes, fillings, and buttercreams. The proper techniques of mixing, folding, and creaming are emphasized. There is also buttercream decorating basics.
10316173 Confections (1 cr.)	Features sugar and candies through the student handling a variety of sugars. Besides learning the principles of sugar usage, the student will become familiar with various types of candies, seasonal treats, and sugar work through production.
10316174 Pastries (1 cr.)	Introduces classical and modern pastry production methods of small desserts for buffet service as well as larger high-end statement pieces. During this course, the student will successfully produce and display desserts for buffet service with garnish according to industry standards.
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
10804123 Math w Business Apps (3 cr.)	This course integrates algebraic concepts, proportions, percents, simple interest, compound interest, annuities, and basic statistics with business/consumer scenarios. It also applies math concepts to the purchasing/buying and selling processes.

Course Descriptions

10809172 Introduction to Diversity Studies (3 cr.)

This course introduces the study of diversity from a local to a global perspective using a holistic, interdisciplinary approach that encourages exploration and prepares students to work in a diverse environment. The course introduces basic diversity concepts, examines the impact of bias and power differentials among groups, explores the use of culturally responsive communication strategies, and compares forces that shape diversity in an international context.

10809198 Intro to Psychology (3 cr.)

This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.

314 - Baking and Pastry Production

10109152 Introduction to Hospitality (3 cr.)

Introduces various aspects of the hospitality industry including lodging, food service, tourism and customer service. Students evaluate potential internship and career opportunities as they explore topics including professionalism, ethics & etiquette.

10314109 Artisan Breads and Rolls (2 cr.)

Offers an in-depth look at the production of breads and rolls. Learners study the principles involved in fermentation, mixing, scaling, proofing and baking. The following items are produced: artisan style breads and rolls, gluten-free breads, sour starters, bagels, pretzels, crackers, flat breads and multiple ethnic foods.

10314110 Baking Essentials (2 cr.)

Applies the basic principles involved in the purchase, preparation and use of food stuffs as it pertains to bakery and pastry. The proper identification and use of equipment, correct measuring techniques, and baker percentages are covered. Students will calculate math challenges using typical bakery scenarios.

10314111 Advanced Cake Decorating 1 (1 cr.)

Focuses on advanced methods of cake decorations through a multitude of mediums. The student will explore specialty cakes through production and learn of their history. There will also be a focus on the design process, structure, and color wheel using a variety of tools and materials.

10314112 Baking and Pastry Operations 1 (3 cr.)

Introduces basic concepts for front of house and back of house production and operations. The student run retail space will focus on customer service, equipment uses, production, and will showcase bakery items prepared by students.

10316101 Food Production, Introduction to (3 cr.)

Introduces quantity food production to the non-culinary student. Topics include preparation of a variety of menu items, equipment use, cooking methods and terminologies, recipe conversion and the essentials of timing and coordination of service.

Course Descriptions

10316118 Sanitation for Food Service Operations (1 cr.)	Focuses on the development of skills to follow sanitation and hygiene provisions in state codes. The Servsafe certification test is included.
10316119 Nutrition for Culinary Arts (1 cr.)	Focuses on the six major nutrients (carbohydrates, proteins, fats, minerals, vitamins and water) and how each is used by the body. The planning of well-balanced diets and the nutritional analysis of diets are emphasized.
10316120 Culinary Applications (2 cr.)	Applies the basic principles of culinary calculations involved in the purchase, preparation and use of goods related to the hospitality field.
10316121 Baking Basics (2 cr.)	Introduces baking skills learned through the production of a variety of pastries including quick breads, cookies, cakes, yeast breads, pate a choux, and meringues. Proficiency will be demonstrated through production and use of equipment and ingredients.
10316122 Baking Techniques (2 cr.)	Learn foundational baking techniques including tarts, pies, cakes, laminated doughs, custards, and sauces learned through production. Use of equipment and ingredients to create specific items will demonstrate proficiency. Presentation of baked goods and pastries is emphasized.
10316170 Science of Baking (2 cr.)	Focuses on identifying, applying and interpreting the scientific concepts of the baking process. Topics include recipe conversion, scaling, measurement, baking terminology, equipment identification and use, timing, heat transfer, ingredient functionality, presentation and display. This course combines lab and lecture activities.
10316172 Cake Production (1 cr.)	Focuses on the production methods used in preparing a variety of cakes, fillings, and buttercreams. The proper techniques of mixing, folding, and creaming are emphasized. There is also buttercream decorating basics.
10316173 Confections (1 cr.)	Features sugar and candies through the student handling a variety of sugars. Besides learning the principles of sugar usage, the student will become familiar with various types of candies, seasonal treats, and sugar work through production.
10316174 Pastries (1 cr.)	Introduces classical and modern pastry production methods of small desserts for buffet service as well as larger high-end statement pieces. During this course, the student will successfully produce and display desserts for buffet service with garnish according to industry standards.
314 - Baking Fundamentals Certificate	
10314109 Artisan Breads and Rolls (2 cr.)	Offers an in-depth look at the production of breads and rolls. Learners study the principles involved in fermentation, mixing, scaling, proofing and baking. The following items are produced: artisan style breads and rolls, gluten-free breads, sour starters, bagels, pretzels, crackers, flat breads and multiple ethnic foods.

Course Descriptions

10316118 Sanitation for Food Service Operations (1 cr.)	Focuses on the development of skills to follow sanitation and hygiene provisions in state codes. The Servsafe certification test is included.
10316119 Nutrition for Culinary Arts (1 cr.)	Focuses on the six major nutrients (carbohydrates, proteins, fats, minerals, vitamins and water) and how each is used by the body. The planning of well-balanced diets and the nutritional analysis of diets are emphasized.
10316121 Baking Basics (2 cr.)	Introduces baking skills learned through the production of a variety of pastries including quick breads, cookies, cakes, yeast breads, pate a choux, and meringues. Proficiency will be demonstrated through production and use of equipment and ingredients.
10316170 Science of Baking (2 cr.)	Focuses on identifying, applying and interpreting the scientific concepts of the baking process. Topics include recipe conversion, scaling, measurement, baking terminology, equipment identification and use, timing, heat transfer, ingredient functionality, presentation and display. This course combines lab and lecture activities.
10316172 Cake Production (1 cr.)	Focuses on the production methods used in preparing a variety of cakes, fillings, and buttercreams. The proper techniques of mixing, folding, and creaming are emphasized. There is also buttercream decorating basics.
10316173 Confections (1 cr.)	Features sugar and candies through the student handling a variety of sugars. Besides learning the principles of sugar usage, the student will become familiar with various types of candies, seasonal treats, and sugar work through production.
10316174 Pastries (1 cr.)	Introduces classical and modern pastry production methods of small desserts for buffet service as well as larger high-end statement pieces. During this course, the student will successfully produce and display desserts for buffet service with garnish according to industry standards.

316 - Culinary Culinary Apprenticeship

10316110 Culinary Fundamentals (3 cr.)	Applies the basic principles involved in the purchase, preparation and use of food stuffs. The proper identification and use of equipment and correct measuring techniques are covered. This course provides the theory basis for production courses.
10316118 Sanitation for Food Service Operations (1 cr.)	Focuses on the development of skills to follow sanitation and hygiene provisions in state codes. The Servsafe certification test is included.
10316120 Culinary Applications (2 cr.)	Applies the basic principles of culinary calculations involved in the purchase, preparation and use of goods related to the hospitality field.
10316133 Meat Identification (1 cr.)	Focuses on the federal program for meat and fish inspection. Meat grading classification (commercial and institutional) and purchasing are discussed. This course also provides practical lessons in meat preparation.

Course Descriptions

10316136 Quantity Cooking (4 cr.)	Introduces quantity food preparation procedures with emphasis in braising, stewing, simmering, roasting, baking, soup, stock and sauce making. Practical experience is given in restaurant, banquet, and cafeteria food presentation techniques. Identification of an assortment of grains, legumes, potatoes, and farinaceous products bring variety to menu planning.
316 - Culinary Culinary Arts	
10109125 Hospitality Sales and Promotion (2 cr.)	Covers sales and promotion in the hospitality industry. The emphasis is on promoting hospitality entities to attract new customers, selling principles and merchandising techniques for products and services, and innovative ways to maintain the interest of existing customers.
10109152 Introduction to Hospitality (3 cr.)	Introduces various aspects of the hospitality industry including lodging, food service, tourism and customer service. Students evaluate potential internship and career opportunities as they explore topics including professionalism, ethics & etiquette.
10316100 Culinary Internship (2 cr.)	Provides the culinary student the opportunity to investigate and learn through structured, hands-on experiences in the food service industry. It is specifically required that the learner be working in a food service establishment where tickets are generated and food is prepared to order.
10316110 Culinary Fundamentals (3 cr.)	Applies the basic principles involved in the purchase, preparation and use of food stuffs. The proper identification and use of equipment and correct measuring techniques are covered. This course provides the theory basis for production courses.
10316118 Sanitation for Food Service Operations (1 cr.)	Focuses on the development of skills to follow sanitation and hygiene provisions in state codes. The Servsafe certification test is included.
10316119 Nutrition for Culinary Arts (1 cr.)	Focuses on the six major nutrients (carbohydrates, proteins, fats, minerals, vitamins and water) and how each is used by the body. The planning of well-balanced diets and the nutritional analysis of diets are emphasized.
10316120 Culinary Applications (2 cr.)	Applies the basic principles of culinary calculations involved in the purchase, preparation and use of goods related to the hospitality field.
10316121 Baking Basics (2 cr.)	Introduces baking skills learned through the production of a variety of pastries including quick breads, cookies, cakes, yeast breads, pate a choux, and meringues. Proficiency will be demonstrated through production and use of equipment and ingredients.
10316122 Baking Techniques (2 cr.)	Learn foundational baking techniques including tarts, pies, cakes, laminated doughs, custards, and sauces learned through production. Use of equipment and ingredients to create specific items will demonstrate proficiency. Presentation of baked goods and pastries is emphasized.

Course Descriptions

10316123 Hospitality Supervision (3 cr.)	Introduces fundamental management techniques including leadership styles; interpersonal skills; planning, organizing and decision-making processes, as well as interviewing, hiring, training and evaluating employees.
10316124 Culinary Skills Development (1 cr.)	Includes the observation and application of basic cooking patterns by proportion. These patterns include stocks, soups, sauces, dry heat and moist heat applications, vegetable applications, grains, and potato applications.
10316125 Culinary Foundations (1 cr.)	Prepares the entry-level culinary student for future success by introducing knife skills development, cooking principles and methods, and organizational skills and Mise en place (French phrase meaning "œput in place" as in set up). Emphasis is placed on hands-on learning and skills development.
10316133 Meat Identification (1 cr.)	Focuses on the federal program for meat and fish inspection. Meat grading classification (commercial and institutional) and purchasing are discussed. This course also provides practical lessons in meat preparation.
10316134 Restaurant Operations - Preparation (4 cr.)	Applies the principles and procedures of kitchen food preparation to a restaurant operation. This course covers production through service, including dining room management, catering and restaurant cooking.
10316135 Restaurant Operations - Service (2 cr.)	Applies the principles and procedures of food preparation to a restaurant operation. This course covers production through service, including dining room management, catering and restaurant cooking.
10316136 Quantity Cooking (4 cr.)	Introduces quantity food preparation procedures with emphasis in braising, stewing, simmering, roasting, baking, soup, stock and sauce making. Practical experience is given in restaurant, banquet, and cafeteria food presentation techniques. Identification of an assortment of grains, legumes, potatoes, and farinaceous products bring variety to menu planning.
10316137 Short Order Cooking (4 cr.)	Provides hands-on experience in all phases of short order techniques. Students use various methods to prepare eggs, omelets, pancakes, and other breakfast items. Lunch cooking introduces the use of fryers, grills, ovens and steamers. Service experience includes line work and practical applications of salads, salad dressings, and greens
10316141 Food, Beverage and Labor Cost Controls (3 cr.)	Covers the concepts and techniques of controlling costs with particular emphasis placed on the cost-to-sales relationship. Students calculate the cost of goods, selling price and relative percentages. They also forecast sales, conduct yield analyses and calculate break-even points.

Course Descriptions

- 10531101 First Aid/CPR, Principles and Practices (1 cr.)** Presents and evaluates basic first aid skills necessary to care for the ill and injured until medical help arrives. Covers the use of an Automated External Defibrillator (AED), as well as CPR for all ages and the recognition and care of cardiac emergencies. Students receive an AHA Healthcare CPR card and a FVTC First Aid certificate upon course completion.
- 10801195 Written Communication (3 cr.)** Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
- 10801196 Oral/Interpersonal Comm (3 cr.)** Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
- 10804123 Math w Business Apps (3 cr.)** This course integrates algebraic concepts, proportions, percents, simple interest, compound interest, annuities, and basic statistics with business/consumer scenarios. It also applies math concepts to the purchasing/buying and selling processes.
- 10809196 Intro to Sociology (3 cr.)** Introduces students to the fundamental sociological concepts, including sociological perspectives, research methods, the significance of culture in society, and the socialization process. Other topics include deviance, the impact of groups on behavior, societal inequities, global changes, the role of social institutions, and social stratification.
- 10809198 Intro to Psychology (3 cr.)** This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.
- 316 - Culinary Culinary Arts - Advanced**
- 10316183 Grilling, Smoking & BBQ (2 cr.)** Features a study of traditional BBQ around the United States, including smoking and grilling techniques with emphasis on different types of meats, fuels, woods and cookers used. The learner will prepare various marinades, brines, rubs, glazes, mops and sauces and will be introduced to KCBS competitions and events.

316 - Culinary Culinary Basics

Course Descriptions

10316101 Food Production, Introduction to (3 cr.)	Introduces quantity food production to the non-culinary student. Topics include preparation of a variety of menu items, equipment use, cooking methods and terminologies, recipe conversion and the essentials of timing and coordination of service.
10316119 Nutrition for Culinary Arts (1 cr.)	Focuses on the six major nutrients (carbohydrates, proteins, fats, minerals, vitamins and water) and how each is used by the body. The planning of well-balanced diets and the nutritional analysis of diets are emphasized.
10316125 Culinary Foundations (1 cr.)	Prepares the entry-level culinary student for future success by introducing knife skills development, cooking principles and methods, and organizational skills and Mise en place (French phrase meaning "œput in place" as in set up). Emphasis is placed on hands-on learning and skills development.
316 - Culinary Food Service	
10109152 Introduction to Hospitality (3 cr.)	Introduces various aspects of the hospitality industry including lodging, food service, tourism and customer service. Students evaluate potential internship and career opportunities as they explore topics including professionalism, ethics & etiquette.
10316110 Culinary Fundamentals (3 cr.)	Applies the basic principles involved in the purchase, preparation and use of food stuffs. The proper identification and use of equipment and correct measuring techniques are covered. This course provides the theory basis for production courses.
10316118 Sanitation for Food Service Operations (1 cr.)	Focuses on the development of skills to follow sanitation and hygiene provisions in state codes. The Servsafe certification test is included.
10316119 Nutrition for Culinary Arts (1 cr.)	Focuses on the six major nutrients (carbohydrates, proteins, fats, minerals, vitamins and water) and how each is used by the body. The planning of well-balanced diets and the nutritional analysis of diets are emphasized.
10316120 Culinary Applications (2 cr.)	Applies the basic principles of culinary calculations involved in the purchase, preparation and use of goods related to the hospitality field.
10316121 Baking Basics (2 cr.)	Introduces baking skills learned through the production of a variety of pastries including quick breads, cookies, cakes, yeast breads, pate a choux, and meringues. Proficiency will be demonstrated through production and use of equipment and ingredients.
10316122 Baking Techniques (2 cr.)	Learn foundational baking techniques including tarts, pies, cakes, laminated doughs, custards, and sauces learned through production. Use of equipment and ingredients to create specific items will demonstrate proficiency. Presentation of baked goods and pastries is emphasized.

Course Descriptions

- 10316125 Culinary Foundations (1 cr.)** Prepares the entry-level culinary student for future success by introducing knife skills development, cooking principles and methods, and organizational skills and Mise en place (French phrase meaning "œput in place" as in set up). Emphasis is placed on hands-on learning and skills development.
- 10316133 Meat Identification (1 cr.)** Focuses on the federal program for meat and fish inspection. Meat grading classification (commercial and institutional) and purchasing are discussed. This course also provides practical lessons in meat preparation.
- 10316136 Quantity Cooking (4 cr.)** Introduces quantity food preparation procedures with emphasis in braising, stewing, simmering, roasting, baking, soup, stock and sauce making. Practical experience is given in restaurant, banquet, and cafeteria food presentation techniques. Identification of an assortment of grains, legumes, potatoes, and farinaceous products bring variety to menu planning.
- 10316137 Short Order Cooking (4 cr.)** Provides hands-on experience in all phases of short order techniques. Students use various methods to prepare eggs, omelets, pancakes, and other breakfast items. Lunch cooking introduces the use of fryers, grills, ovens and steamers. Service experience includes line work and practical applications of salads, salad dressings, and greens
- 10801195 Written Communication (3 cr.)** Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
- 10804123 Math w Business Apps (3 cr.)** This course integrates algebraic concepts, proportions, percents, simple interest, compound interest, annuities, and basic statistics with business/consumer scenarios. It also applies math concepts to the purchasing/buying and selling processes.

316 - Culinary Food Service Production Certificate

- 10109152 Introduction to Hospitality (3 cr.)** Introduces various aspects of the hospitality industry including lodging, food service, tourism and customer service. Students evaluate potential internship and career opportunities as they explore topics including professionalism, ethics & etiquette.
- 10316110 Culinary Fundamentals (3 cr.)** Applies the basic principles involved in the purchase, preparation and use of food stuffs. The proper identification and use of equipment and correct measuring techniques are covered. This course provides the theory basis for production courses.
- 10316118 Sanitation for Food Service Operations (1 cr.)** Focuses on the development of skills to follow sanitation and hygiene provisions in state codes. The Servsafe certification test is included.

Course Descriptions

- 10316119 Nutrition for Culinary Arts (1 cr.)** Focuses on the six major nutrients (carbohydrates, proteins, fats, minerals, vitamins and water) and how each is used by the body. The planning of well-balanced diets and the nutritional analysis of diets are emphasized.
- 10316120 Culinary Applications (2 cr.)** Applies the basic principles of culinary calculations involved in the purchase, preparation and use of goods related to the hospitality field.
- 10316121 Baking Basics (2 cr.)** Introduces baking skills learned through the production of a variety of pastries including quick breads, cookies, cakes, yeast breads, pate a choux, and meringues. Proficiency will be demonstrated through production and use of equipment and ingredients.
- 10316122 Baking Techniques (2 cr.)** Learn foundational baking techniques including tarts, pies, cakes, laminated doughs, custards, and sauces learned through production. Use of equipment and ingredients to create specific items will demonstrate proficiency. Presentation of baked goods and pastries is emphasized.
- 10316136 Quantity Cooking (4 cr.)** Introduces quantity food preparation procedures with emphasis in braising, stewing, simmering, roasting, baking, soup, stock and sauce making. Practical experience is given in restaurant, banquet, and cafeteria food presentation techniques. Identification of an assortment of grains, legumes, potatoes, and farinaceous products bring variety to menu planning.
- 10316137 Short Order Cooking (4 cr.)** Provides hands-on experience in all phases of short order techniques. Students use various methods to prepare eggs, omelets, pancakes, and other breakfast items. Lunch cooking introduces the use of fryers, grills, ovens and steamers. Service experience includes line work and practical applications of salads, salad dressings, and greens

316 - Culinary Food Service Specialist

- 10316101 Food Production, Introduction to (3 cr.)** Introduces quantity food production to the non-culinary student. Topics include preparation of a variety of menu items, equipment use, cooking methods and terminologies, recipe conversion and the essentials of timing and coordination of service.
- 10316110 Culinary Fundamentals (3 cr.)** Applies the basic principles involved in the purchase, preparation and use of food stuffs. The proper identification and use of equipment and correct measuring techniques are covered. This course provides the theory basis for production courses.
- 10316121 Baking Basics (2 cr.)** Introduces baking skills learned through the production of a variety of pastries including quick breads, cookies, cakes, yeast breads, pate a choux, and meringues. Proficiency will be demonstrated through production and use of equipment and ingredients.

Course Descriptions

- 10316122 Baking Techniques (2 cr.)** Learn foundational baking techniques including tarts, pies, cakes, laminated doughs, custards, and sauces learned through production. Use of equipment and ingredients to create specific items will demonstrate proficiency. Presentation of baked goods and pastries is emphasized.
- 10316125 Culinary Foundations (1 cr.)** Prepares the entry-level culinary student for future success by introducing knife skills development, cooking principles and methods, and organizational skills and Mise en place (French phrase meaning "œput in place" as in set up). Emphasis is placed on hands-on learning and skills development.

316 - Culinary Introduction to Culinary and Hospitality Careers

- 10109152 Introduction to Hospitality (3 cr.)** Introduces various aspects of the hospitality industry including lodging, food service, tourism and customer service. Students evaluate potential internship and career opportunities as they explore topics including professionalism, ethics & etiquette.
- 10316110 Culinary Fundamentals (3 cr.)** Applies the basic principles involved in the purchase, preparation and use of food stuffs. The proper identification and use of equipment and correct measuring techniques are covered. This course provides the theory basis for production courses.
- 10316118 Sanitation for Food Service Operations (1 cr.)** Focuses on the development of skills to follow sanitation and hygiene provisions in state codes. The Servsafe certification test is included.
- 10316119 Nutrition for Culinary Arts (1 cr.)** Focuses on the six major nutrients (carbohydrates, proteins, fats, minerals, vitamins and water) and how each is used by the body. The planning of well-balanced diets and the nutritional analysis of diets are emphasized.
- 10316125 Culinary Foundations (1 cr.)** Prepares the entry-level culinary student for future success by introducing knife skills development, cooking principles and methods, and organizational skills and Mise en place (French phrase meaning "œput in place" as in set up). Emphasis is placed on hands-on learning and skills development.

316 - Culinary Meat Processing Specialist

- 10006172 Livestock Essentials (2 cr.)** Explores the agriculture industry and how it influences meat products. Topics discussed will include the multitude of variables that affect meat quality including the production methods used to raise the animal, how the animal is marketed and sold, and how the carcass is evaluated and handled.
- 10316118 Sanitation for Food Service Operations (1 cr.)** Focuses on the development of skills to follow sanitation and hygiene provisions in state codes. The Servsafe certification test is included.
- 10316133 Meat Identification (1 cr.)** Focuses on the federal program for meat and fish inspection. Meat grading classification (commercial and institutional) and purchasing are discussed. This course also provides practical lessons in meat preparation.

Course Descriptions

- 10316140 Meat Fabrication Internship 1 (2 cr.)** Provides the meat processing specialist student the opportunity to investigate and learn through prescribed, hands-on experiences in the meat processing industry. It is specifically required that the learner be working in a meat processing facility and participate in various defined production methods and procedures.
- 10316153 Meat Fabrication Internship 2 (2 cr.)** Provides the meat processing specialist student a continuation of Meat Fabrication Internship 1 with different prescribed, hands-on production methods and procedures. This internship could be done at the same meat processing facility as the first internship or could be completed at a different operation.

402 - Aeronautics-Pilot Training

- 10402101 Private Pilot-Ground (3 cr.)** Covers ground training of aerodynamics and aircraft performance, aircraft systems, aviation human factors, air traffic control and airspace, aviation law and regulation, aviation weather, aviation safety, airworthiness, flight maneuvers, weight and balance, navigation, and emergency operations to the Private Pilot certificate level.
- 10402102 Aviation Weather (3 cr.)** Covers ground training of aviation weather, aviation human factors, aviation safety, and emergency operations to the Commercial Pilot certificate level.
- 10402103 Instrument-Ground (3 cr.)** Covers ground training of aerodynamics and aircraft performance, aircraft systems, aviation human factors, air traffic control and airspace, aviation law and regulation, aviation weather, aviation safety, airworthiness, flight maneuvers, weight and balance, navigation, and emergency operations to the Commercial Pilot certificate level with an emphasis on IFR operations.
- 10402104 Commercial-Ground (3 cr.)** Covers ground training of aerodynamics and aircraft performance, aircraft systems, aviation human factors, air traffic control and airspace, aviation law and regulation, aviation weather, aviation safety, airworthiness, flight maneuvers, weight and balance, navigation, and emergency operations to the Commercial Pilot certificate level with an emphasis on multi-engine operations.
- 10402105 Aerodynamics (3 cr.)** Covers ground training of aerodynamics and aircraft performance, aircraft design and limitations, and theories of flight to the Commercial Pilot certificate level.
- 10402106 Aircraft Systems (3 cr.)** Covers ground training of aircraft systems, aviation human factors, aviation law and regulation, aviation safety, airworthiness, and emergency operations to the Commercial Pilot certificate level.

Course Descriptions

- 10402113 Private Pilot-Flight 1A (1 cr.)** Prepares the student to fly the aircraft solo and covers the basic fundamentals of flying including ground and flight training of aerodynamics and aircraft performance, aircraft systems, aviation human factors, air traffic control and airspace, aviation law and regulation, aviation weather, aviation safety, airworthiness, flight maneuvers, weight and balance, and emergency operations to the Private Pilot certificate level. This course begins Stage 1 of the 141 Private Pilot training course.
- 10402115 Private Pilot-Flight 1B (1 cr.)** Prepares the student to fly the aircraft solo and covers the basic fundamentals of flying including ground and flight training of aerodynamics and aircraft performance, aircraft systems, aviation human factors, air traffic control and airspace, aviation law and regulation, aviation weather, aviation safety, airworthiness, flight maneuvers, weight and balance, and emergency operations to the Private Pilot certificate level. This course completes Stage 1 of the 141 Private Pilot training course.
- 10402116 Instrument Flight 2A (1 cr.)** Learn and refine basic radio navigation procedures, including the intercepting and tracking of courses through the use of VORs, Localizers, NDBs and other navigation systems. The student will also learn to perform instrument approaches. Also covered is ground and flight training of aerodynamics and aircraft performance, aircraft systems, aviation human factors, air traffic control and airspace, aviation law and regulation, aviation weather, aviation safety, airworthiness, flight maneuvers, weight and balance, navigation, and emergency operations to the Commercial Pilot certificate level with an emphasis on IFR Operations. This course begins Stage 2 of the 141 Instrument training course.
- 10402117 Instrument Flight 2B (1 cr.)** Learn and refine basic radio navigation procedures, including the intercepting and tracking of courses through the use of VORs, Localizers, NDBs and other navigation systems. The student will also learn to perform instrument approaches. Also covered is ground and flight training of aerodynamics and aircraft performance, aircraft systems, aviation human factors, air traffic control and airspace, aviation law and regulation, aviation weather, aviation safety, airworthiness, flight maneuvers, weight and balance, navigation, and emergency operations to the Commercial Pilot certificate level with an emphasis on IFR Operations. This course completes Stage 2 of the 141 Instrument training course.

Course Descriptions

- 10402118 Commercial Flight 1A (1 cr.)** Broaden your knowledge of VFR cross-country operations, including meteorology and airspace to provide the skill necessary to operate safely during extended cross-country flights. Also covered is ground and flight training of aerodynamics and aircraft performance, aircraft systems, aviation human factors, air traffic control and airspace, aviation law and regulation, aviation weather, aviation safety, airworthiness, flight maneuvers, weight and balance, navigation, and emergency operations to the Commercial Pilot certificate level with an emphasis on IFR operations. This course begins Stage 1 of the 141 Commercial Pilot training course.
- 10402119 Commercial Flight 1B (1 cr.)** Broaden your knowledge of VFR cross-country operations, including meteorology and airspace to provide the skill necessary to operate safely during extended cross-country flights. Also covered is ground and flight training of aerodynamics and aircraft performance, aircraft systems, aviation human factors, air traffic control and airspace, aviation law and regulation, aviation weather, aviation safety, airworthiness, flight maneuvers, weight and balance, navigation, and emergency operations to the Commercial Pilot certificate level with an emphasis on IFR operations. This course completes Stage 1 of the 141 Commercial Pilot training course.
- 10402121 Commercial Flight 2A (1 cr.)** Commercial maneuvers are introduced, and students are provided an opportunity to continue practice of takeoffs, landings, go-arounds, and emergency operations. This stage also continues exercise of instrument flying skills. Also covered is ground and flight training of aerodynamics and aircraft performance, aircraft systems, aviation human factors, air traffic control and airspace, aviation law and regulation, aviation weather, aviation safety, airworthiness, flight maneuvers, weight and balance, navigation, and emergency operations to the Commercial Pilot certificate level with an emphasis on IFR operations. This course begins Stage 2 of the 141 Commercial Pilot training course.

Course Descriptions

- 10402122 Private Pilot-Flight 2 (1 cr.)** Introduces the student to navigating to nearby airports by use of pilotage. The student will also be introduced to diversion, lost procedures, and planning for alternatives if the planned flight cannot be completed. The student will also be introduced to maximum performance takeoffs and landings. Also covered is ground and flight training of aerodynamics and aircraft performance, aircraft systems, aviation human factors, air traffic control and airspace, aviation law and regulation, aviation weather, aviation safety, airworthiness, flight maneuvers, weight and balance, navigation, and emergency operations to the Private Pilot certificate level. This course is Stage 2 of the 141 Private Pilot training course.
- 10402125 Private Pilot-Flight 3 (1 cr.)** Introduces additional elements of aviation that are required of a Private Pilot. The skills of navigation, cross country operations, night operations, and flight solely by reference to the instruments shall be developed. Also covered is ground and flight training of aerodynamics and aircraft performance, aircraft systems, aviation human factors, air traffic control and airspace, aviation law and regulation, aviation weather, aviation safety, airworthiness, flight maneuvers, weight and balance, navigation, and emergency operations to the Private Pilot certificate level. This course is Stage 3 of the 141 Private Pilot training course.
- 10402126 Instrument Flight 1 (1 cr.)** Learn precise airplane attitude control solely by reference to the airplane instruments. Also covered is ground and flight training of aerodynamics and aircraft performance, aircraft systems, aviation human factors, air traffic control and airspace, aviation law and regulation, aviation weather, aviation safety, airworthiness, flight maneuvers, weight and balance, navigation, and emergency operations to the Commercial Pilot certificate level with an emphasis on IFR Operations. This course is Stage 1 of the 141 Instrument training course.
- 10402128 Instrument Flight 3 (1 cr.)** Plan and perform IFR cross-country flights while refining the basic IFR skills required to operate in the instrument environment. Also covered is ground and flight training of aerodynamics and aircraft performance, aircraft systems, aviation human factors, air traffic control and airspace, aviation law and regulation, aviation weather, aviation safety, airworthiness, flight maneuvers, weight and balance, navigation, and emergency operations to the Commercial Pilot certificate level with an emphasis on IFR Operations. This course is Stage 3 of the 141 Instrument training course.

Course Descriptions

10402129 Commercial Flight 2B (1 cr.)	Commercial maneuvers are introduced, and students are provided an opportunity to continue practice of takeoffs, landings, go-arounds, and emergency operations. This stage also continues exercise of instrument flying skills. Also covered is ground and flight training of aerodynamics and aircraft performance, aircraft systems, aviation human factors, air traffic control and airspace, aviation law and regulation, aviation weather, aviation safety, airworthiness, flight maneuvers, weight and balance, navigation, and emergency operations to the Commercial Pilot certificate level with an emphasis on IFR operations. This course completes Stage 2 of the 141 Commercial Pilot training course.
10402131 Aviation Safety & Human Factors, Intro to (1 cr.)	Covers ground training of decision-making, situational awareness, crew coordination, communication, human error, fatigue, fitness, attitudes, training devices, controls, workload management, CRM, man/machine interference that may include pilot/aircraft interference or flight deck/cockpit design, so that the student understands and can identify how human factors affect aviation safety at an introductory level.
10402132 Fundamentals of ATC and Airspace (1 cr.)	Covers ground training of a fundamental knowledge of the ATC system in the United States, including navigational aids; airspace; communications; the Code of Federal Aviation Regulations; ATC procedures; control tower operations; non-radar operations; radar operations; and differing types of environmental concerns within a geographic area, so that the student can understand and apply critical elements of ATC within the National Airspace System (NAS).
10402133 Applied Aviation Safety and Human Factors (1 cr.)	Covers ground training of decision-making, situational awareness, crew coordination, communication, human error, fatigue, fitness, attitudes, training devices, controls, workload management, CRM, man/machine interference that may include pilot/aircraft interference or flight deck/cockpit design, so that the student understands and can identify how human factors affect aviation safety at an applied level.
10402154 Commercial Flight 4 (1 cr.)	Finish preparing the skills required for a Commercial Single/Multi-Engine Instrument Pilot. Also covered is ground and flight training of aerodynamics and aircraft performance, aircraft systems, aviation human factors, air traffic control and airspace, aviation law and regulation, aviation weather, aviation safety, airworthiness, flight maneuvers, weight and balance, navigation, and emergency operations to the Commercial Pilot certificate level with an emphasis on multi-engine operations. This course is Stage 4 of the Commercial Pilot training course.

Course Descriptions

10402173 CFI-Flight 3 (1 cr.)	Learn to teach in a single engine airplane and have an opportunity to practice those skills. This course is Stage 3 of the Flight instructor training course. This will be the preparations for all requirements for initial CFI certification in a Single Engine airplane to the applicable Airman Certification Standards or Practical Test Standards.
10402174 CFI-Flight 4 (1 cr.)	Learn to teach in a Multi engine airplane and have an opportunity to practice those skills. This course is Stage 4 of the Flight instructor training course. This will be the preparations for all requirements for additional flight instructor class rating in a Multi Engine airplane to the applicable Airman Certification Standards or Practical Test Standards.
10402175 CFI-Flight 5 (1 cr.)	Learn to teach instrument skills in a single engine airplane and have an opportunity to practice those skills. This course is Stage 5 of the Flight instructor training course. This will be the preparations for additional flight instructor instrument rating in a single engine airplane to the applicable Airman Certification Standards or Practical Test Standards.
10402181 Commercial Flight 3A (1 cr.)	Learn to fly a complex multiengine airplane and have an opportunity to practice those skills. In addition, the student continues to practice commercial maneuvers. Also covered is ground and flight training of aerodynamics and aircraft performance, aircraft systems, aviation human factors, air traffic control and airspace, aviation law and regulation, aviation weather, aviation safety, airworthiness, flight maneuvers, weight and balance, navigation, and emergency operations to the Commercial Pilot certificate level with an emphasis on single-engine operations. This course begins Stage 3 of the 141 Commercial Pilot training course.
10402182 Commercial Flight 3B (1 cr.)	Learn to fly a complex multiengine airplane and have an opportunity to practice those skills. In addition, the student continues to practice commercial maneuvers. Also covered is ground and flight training of aerodynamics and aircraft performance, aircraft systems, aviation human factors, air traffic control and airspace, aviation law and regulation, aviation weather, aviation safety, airworthiness, flight maneuvers, weight and balance, navigation, and emergency operations to the Commercial Pilot certificate level with an emphasis on single-engine operations. This course completes Stage 3 of the 141 Commercial Pilot training course.

Course Descriptions

- 10402184 CFI-Flight 1B (1 cr.)** Covers ground and flight training of fundamentals of instructing, aerodynamics and aircraft performance, aircraft systems, aviation human factors, air traffic control and airspace, aviation law and regulation, aviation weather, aviation safety, airworthiness, flight maneuvers, weight and balance, navigation, and emergency operations to the Sport, Recreational, Private, and Commercial Pilot certificate level from the perspective of a single-engine CFI applicant. This course completes Stage 1 of the Flight instructor training course.
- 10402187 CFI-Flight 2A (1 cr.)** Preparation of instructional skills for teaching of Recreational, Private, Commercial Single and Multi-Engine airplane with instrument rating. The CFI applicant will complete spin training as well as accomplish the required teaching observations. The CFI applicant must also prepare lesson plans and teaching outlines for all tasks of the Private, Commercial and Instrument pilot Airman Certification Standards. This course begins Stage 2 of the Flight instructor training course.
- 10402188 CFI-Flight 2B (1 cr.)** Preparation of instructional skills for teaching of Recreational, Private, Commercial Single and Multi-Engine airplane with instrument rating. The CFI applicant will complete spin training as well as accomplish the required teaching observations. The CFI applicant must also prepare lesson plans and teaching outlines for all tasks of the Private, Commercial and Instrument pilot Airman Certification Standards. This course completes Stage 2 of the Flight instructor training course.
- 10402190 CFI-Flight 1A (1 cr.)** Covers ground and flight training of fundamentals of instructing, aerodynamics and aircraft performance, aircraft systems, aviation human factors, air traffic control and airspace, aviation law and regulation, aviation weather, aviation safety, airworthiness, flight maneuvers, weight and balance, navigation, and emergency operations to the Sport, Recreational, Private, and Commercial Pilot certificate level from the perspective of a single-engine CFI applicant. This course begins Stage 1 of the Flight instructor training course.
- 10801195 Written Communication (3 cr.)** Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
- 10801196 Oral/Interpersonal Comm (3 cr.)** Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.

Course Descriptions

10804113 College Technical Math 1A (3 cr.) Topics include: solving linear equations; graphing; percent; proportions; measurement systems; computational geometry; and right triangle trigonometry. Emphasis will be on the application of skills to technical problems. Successful completion of College Technical Mathematics 1A and College Technical Mathematics 1B is the equivalent of College Technical Mathematics 1.

10804114 College Technical Math 1B (2 cr.) This course is a continuation of College Technical Mathematics 1A. Topics include: performing operations on polynomials; solving quadratic and rational equations; formula rearrangement; solving systems of equations; and oblique triangle trigonometry. Emphasis will be on the application of skills to technical problems. Successful completion of College Technical Mathematics 1A and College Technical Mathematics 1B is the equivalent of College Technical Mathematics 1.

10809195 Economics (3 cr.) This course is designed to give an overview of microeconomics, macroeconomics, and international economics. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues.

10809198 Intro to Psychology (3 cr.) This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.

402 - Aeronautics-Professional Pilot

10402101 Private Pilot-Ground (3 cr.) Covers ground training of aerodynamics and aircraft performance, aircraft systems, aviation human factors, air traffic control and airspace, aviation law and regulation, aviation weather, aviation safety, airworthiness, flight maneuvers, weight and balance, navigation, and emergency operations to the Private Pilot certificate level.

10402102 Aviation Weather (3 cr.) Covers ground training of aviation weather, aviation human factors, aviation safety, and emergency operations to the Commercial Pilot certificate level.

10402103 Instrument-Ground (3 cr.) Covers ground training of aerodynamics and aircraft performance, aircraft systems, aviation human factors, air traffic control and airspace, aviation law and regulation, aviation weather, aviation safety, airworthiness, flight maneuvers, weight and balance, navigation, and emergency operations to the Commercial Pilot certificate level with an emphasis on IFR operations.

Course Descriptions

10402104 Commercial-Ground (3 cr.)	Covers ground training of aerodynamics and aircraft performance, aircraft systems, aviation human factors, air traffic control and airspace, aviation law and regulation, aviation weather, aviation safety, airworthiness, flight maneuvers, weight and balance, navigation, and emergency operations to the Commercial Pilot certificate level with an emphasis on multi-engine operations.
10402105 Aerodynamics (3 cr.)	Covers ground training of aerodynamics and aircraft performance, aircraft design and limitations, and theories of flight to the Commercial Pilot certificate level.
10402106 Aircraft Systems (3 cr.)	Covers ground training of aircraft systems, aviation human factors, aviation law and regulation, aviation safety, airworthiness, and emergency operations to the Commercial Pilot certificate level.
10402113 Private Pilot-Flight 1A (1 cr.)	Prepares the student to fly the aircraft solo and covers the basic fundamentals of flying including ground and flight training of aerodynamics and aircraft performance, aircraft systems, aviation human factors, air traffic control and airspace, aviation law and regulation, aviation weather, aviation safety, airworthiness, flight maneuvers, weight and balance, and emergency operations to the Private Pilot certificate level. This course begins Stage 1 of the 141 Private Pilot training course.
10402115 Private Pilot-Flight 1B (1 cr.)	Prepares the student to fly the aircraft solo and covers the basic fundamentals of flying including ground and flight training of aerodynamics and aircraft performance, aircraft systems, aviation human factors, air traffic control and airspace, aviation law and regulation, aviation weather, aviation safety, airworthiness, flight maneuvers, weight and balance, and emergency operations to the Private Pilot certificate level. This course completes Stage 1 of the 141 Private Pilot training course.
10402116 Instrument Flight 2A (1 cr.)	Learn and refine basic radio navigation procedures, including the intercepting and tracking of courses through the use of VORs, Localizers, NDBs and other navigation systems. The student will also learn to perform instrument approaches. Also covered is ground and flight training of aerodynamics and aircraft performance, aircraft systems, aviation human factors, air traffic control and airspace, aviation law and regulation, aviation weather, aviation safety, airworthiness, flight maneuvers, weight and balance, navigation, and emergency operations to the Commercial Pilot certificate level with an emphasis on IFR Operations. This course begins Stage 2 of the 141 Instrument training course.

Course Descriptions

- 10402117 Instrument Flight 2B (1 cr.)** Learn and refine basic radio navigation procedures, including the intercepting and tracking of courses through the use of VORs, Localizers, NDBs and other navigation systems. The student will also learn to perform instrument approaches. Also covered is ground and flight training of aerodynamics and aircraft performance, aircraft systems, aviation human factors, air traffic control and airspace, aviation law and regulation, aviation weather, aviation safety, airworthiness, flight maneuvers, weight and balance, navigation, and emergency operations to the Commercial Pilot certificate level with an emphasis on IFR Operations. This course completes Stage 2 of the 141 Instrument training course.
- 10402118 Commercial Flight 1A (1 cr.)** Broaden your knowledge of VFR cross-country operations, including meteorology and airspace to provide the skill necessary to operate safely during extended cross-country flights. Also covered is ground and flight training of aerodynamics and aircraft performance, aircraft systems, aviation human factors, air traffic control and airspace, aviation law and regulation, aviation weather, aviation safety, airworthiness, flight maneuvers, weight and balance, navigation, and emergency operations to the Commercial Pilot certificate level with an emphasis on IFR operations. This course begins Stage 1 of the 141 Commercial Pilot training course.
- 10402119 Commercial Flight 1B (1 cr.)** Broaden your knowledge of VFR cross-country operations, including meteorology and airspace to provide the skill necessary to operate safely during extended cross-country flights. Also covered is ground and flight training of aerodynamics and aircraft performance, aircraft systems, aviation human factors, air traffic control and airspace, aviation law and regulation, aviation weather, aviation safety, airworthiness, flight maneuvers, weight and balance, navigation, and emergency operations to the Commercial Pilot certificate level with an emphasis on IFR operations. This course completes Stage 1 of the 141 Commercial Pilot training course.

Course Descriptions

- 10402121 Commercial Flight 2A (1 cr.)** Commercial maneuvers are introduced, and students are provided an opportunity to continue practice of takeoffs, landings, go-arounds, and emergency operations. This stage also continues exercise of instrument flying skills. Also covered is ground and flight training of aerodynamics and aircraft performance, aircraft systems, aviation human factors, air traffic control and airspace, aviation law and regulation, aviation weather, aviation safety, airworthiness, flight maneuvers, weight and balance, navigation, and emergency operations to the Commercial Pilot certificate level with an emphasis on IFR operations. This course begins Stage 2 of the 141 Commercial Pilot training course.
- 10402122 Private Pilot-Flight 2 (1 cr.)** Introduces the student to navigating to nearby airports by use of pilotage. The student will also be introduced to diversion, lost procedures, and planning for alternatives if the planned flight cannot be completed. The student will also be introduced to maximum performance takeoffs and landings. Also covered is ground and flight training of aerodynamics and aircraft performance, aircraft systems, aviation human factors, air traffic control and airspace, aviation law and regulation, aviation weather, aviation safety, airworthiness, flight maneuvers, weight and balance, navigation, and emergency operations to the Private Pilot certificate level. This course is Stage 2 of the 141 Private Pilot training course.
- 10402125 Private Pilot-Flight 3 (1 cr.)** Introduces additional elements of aviation that are required of a Private Pilot. The skills of navigation, cross country operations, night operations, and flight solely by reference to the instruments shall be developed. Also covered is ground and flight training of aerodynamics and aircraft performance, aircraft systems, aviation human factors, air traffic control and airspace, aviation law and regulation, aviation weather, aviation safety, airworthiness, flight maneuvers, weight and balance, navigation, and emergency operations to the Private Pilot certificate level. This course is Stage 3 of the 141 Private Pilot training course.
- 10402126 Instrument Flight 1 (1 cr.)** Learn precise airplane attitude control solely by reference to the airplane instruments. Also covered is ground and flight training of aerodynamics and aircraft performance, aircraft systems, aviation human factors, air traffic control and airspace, aviation law and regulation, aviation weather, aviation safety, airworthiness, flight maneuvers, weight and balance, navigation, and emergency operations to the Commercial Pilot certificate level with an emphasis on IFR Operations. This course is Stage 1 of the 141 Instrument training course.

Course Descriptions

- 10402128 Instrument Flight 3 (1 cr.)** Plan and perform IFR cross-country flights while refining the basic IFR skills required to operate in the instrument environment. Also covered is ground and flight training of aerodynamics and aircraft performance, aircraft systems, aviation human factors, air traffic control and airspace, aviation law and regulation, aviation weather, aviation safety, airworthiness, flight maneuvers, weight and balance, navigation, and emergency operations to the Commercial Pilot certificate level with an emphasis on IFR Operations. This course is Stage 3 of the 141 Instrument training course.
- 10402129 Commercial Flight 2B (1 cr.)** Commercial maneuvers are introduced, and students are provided an opportunity to continue practice of takeoffs, landings, go-arounds, and emergency operations. This stage also continues exercise of instrument flying skills. Also covered is ground and flight training of aerodynamics and aircraft performance, aircraft systems, aviation human factors, air traffic control and airspace, aviation law and regulation, aviation weather, aviation safety, airworthiness, flight maneuvers, weight and balance, navigation, and emergency operations to the Commercial Pilot certificate level with an emphasis on IFR operations. This course completes Stage 2 of the 141 Commercial Pilot training course.
- 10402154 Commercial Flight 4 (1 cr.)** Finish preparing the skills required for a Commercial Single/Multi-Engine Instrument Pilot. Also covered is ground and flight training of aerodynamics and aircraft performance, aircraft systems, aviation human factors, air traffic control and airspace, aviation law and regulation, aviation weather, aviation safety, airworthiness, flight maneuvers, weight and balance, navigation, and emergency operations to the Commercial Pilot certificate level with an emphasis on multi-engine operations. This course is Stage 4 of the Commercial Pilot training course.
- 10402181 Commercial Flight 3A (1 cr.)** Learn to fly a complex multiengine airplane and have an opportunity to practice those skills. In addition, the student continues to practice commercial maneuvers. Also covered is ground and flight training of aerodynamics and aircraft performance, aircraft systems, aviation human factors, air traffic control and airspace, aviation law and regulation, aviation weather, aviation safety, airworthiness, flight maneuvers, weight and balance, navigation, and emergency operations to the Commercial Pilot certificate level with an emphasis on single-engine operations. This course begins Stage 3 of the 141 Commercial Pilot training course.

Course Descriptions

10402182 Commercial Flight 3B (1 cr.) Learn to fly a complex multiengine airplane and have an opportunity to practice those skills. In addition, the student continues to practice commercial maneuvers. Also covered is ground and flight training of aerodynamics and aircraft performance, aircraft systems, aviation human factors, air traffic control and airspace, aviation law and regulation, aviation weather, aviation safety, airworthiness, flight maneuvers, weight and balance, navigation, and emergency operations to the Commercial Pilot certificate level with an emphasis on single-engine operations. This course completes Stage 3 of the 141 Commercial Pilot training course.

402 - Aviation Management

10102103 Business Law 1 (3 cr.) Introduces legal principles and standard business law concepts and their implications for business. It emphasizes contracts, sales, commercial paper, bailment, agency and real property, with references to the Uniform Commercial Code and recent consumer legislation.

10102112 Business, Introduction to (3 cr.) Provides an overview of the variety of activities in the world of business. It focuses on the responsibilities connected with operating a business from both organizational and managerial viewpoints. It also examines the role of government in business.

10103120 MS Office Suite, Introduction (2 cr.) Provides an opportunity to gain technical skills employers are seeking, by using the features in Outlook, Word, Excel, and PowerPoint. Through hands-on course work, students will be able to integrate Word, Excel and PowerPoint.

10116155 Business Ethics (3 cr.) Explores ethical considerations and sustainability issues across business areas such as human resources, accounting and marketing. Examines the differences between legal and ethical decision making.

10116193 Human Resources, Introduction to (3 cr.) Covers human resources planning and processes. Topics include human resource development, employee selection, performance appraisals, compensation, training, labor relations, motivation, teamwork and introduces employment related laws.

10182131 Fundamentals of Supply Chain Management (3 cr.) Introduces the key concepts of supply chain management. Students learn tips, techniques, and best practices in supply chain operations. Students will stay up to date on the newest thinking, strategies, developments, and technologies in supply chain management.

10196110 Cost Controls and Budgeting (3 cr.) Examines how financial information is interpreted and applied by supervisors/managers in planning and controlling business activities. This managerial accounting course emphasizes the budgeting process.

Course Descriptions

10196188 Project Management, Intro to (3 cr.)	Focuses on how to apply the skills and tools necessary to design, implement and evaluate formal projects. Each learner will write a project proposal, work with project teams, sequence project tasks, develop project budgets, identify project resources, implement the project, chart project progress, deal with variations, evaluate the project, and use various technology in these processes.
10196190 Leadership Development (3 cr.)	Covers the supervisor's role in leadership effectiveness. Topics include theories of leadership, development and implementation of teams, impact of leadership style, philosophy of corporate culture and leadership in the global marketplace.
10196191 Supervision (3 cr.)	Uses a practical approach to training people in the basics of supervision and management. This course emphasizes the application of theory and covers management functions, the skills needed to perform those functions, the history of management, contemporary management trends, ethics, communication and total quality management.
10196192 Managing for Quality (3 cr.)	Applies the skills and tools necessary to implement and maintain a continuous improvement environment. Each learner will demonstrate the application of a personal philosophy of quality, identifying all stakeholder relationships, meeting/exceeding customer expectations, a systems-focused approach, using appropriate models and tools, managing a quality improvement project and measuring effectiveness of continuous improvement activities.
10402131 Aviation Safety & Human Factors, Intro to (1 cr.)	Covers ground training of decision-making, situational awareness, crew coordination, communication, human error, fatigue, fitness, attitudes, training devices, controls, workload management, CRM, man/machine interference that may include pilot/aircraft interference or flight deck/cockpit design, so that the student understands and can identify how human factors affect aviation safety at an introductory level.
10402133 Applied Aviation Safety and Human Factors (1 cr.)	Covers ground training of decision-making, situational awareness, crew coordination, communication, human error, fatigue, fitness, attitudes, training devices, controls, workload management, CRM, man/machine interference that may include pilot/aircraft interference or flight deck/cockpit design, so that the student understands and can identify how human factors affect aviation safety at an applied level.
10449162 Fundamentals of Occupational Safety (3 cr.)	Provides the learner with the fundamentals of occupational safety, including the business case for safety, common industrial hazards, hazard control, and common OSHA safety standards.

Course Descriptions

10486101 Aviation Records, Regulations & Publications (3 cr.)

Introduces the student to the Code of Federal Regulations that govern U.S. civil aviation. Generate various aircraft maintenance records that document: repairs, alterations, weight and balance changes, life-limited parts, and inspection status. Students will also study how various manufactures'™ documents are used in the maintenance of aircraft.

10623195 Lean Tools (2 cr.)

Introduces useful tools to use when implementing Lean in your organization. Major course topics include team building, lean tools and project management.

10801195 Written Communication (3 cr.)

Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.

10801196 Oral/Interpersonal Comm (3 cr.)

Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.

10804135 Quantitative Reasoning (3 cr.)

This course is intended to develop analytic reasoning and the ability to solve quantitative problems. Topics to be covered may include: construction & interpretation of graphs; descriptive statistics; geometry & spatial visualizations; math of finance; functions and modeling; probability; and logic. Appropriate use of units and dimensions, estimates, mathematical notation, and available technology will be emphasized throughout the course.

10809195 Economics (3 cr.)

This course is designed to give an overview of microeconomics, macroeconomics, and international economics. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues.

10809198 Intro to Psychology (3 cr.)

This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.

404 - Automobile - Automotive Technician

Course Descriptions

10602100 Automotive Maintenance and Light Repair 1 (4 cr.)	Focuses on developing skills in professionalism, safety, and the use of basic and power tools. Students are introduced to the automotive service industry and learn to use both comprehensive and manufacturer's service information to perform vehicle maintenance in 9 Automotive Service Excellence (ASE) areas.
10602101 Automotive Maintenance and Light Repair 2 (4 cr.)	Focuses on developing the skills needed to diagnose, service and repair vehicle braking systems with an introduction to ABS. Includes the development of skills needed to perform maintenance and repair of chassis and driveline related items.
10602102 Automotive Maintenance and Light Repair 3 (4 cr.)	Focuses on developing the skills needed to diagnose, service and repair electrical and electronic systems. Learners apply Ohm's Law to basic electrical circuit diagnosis. Develops skills needed to diagnose, service, and repair electrical and electronic systems, including batteries, starting, charging, and lighting systems, and computer control systems.
10602105 Automotive Maintenance and Light Repair 4 (4 cr.)	Focuses on developing the skills needed to diagnose, service and repair steering and suspension systems including wheel alignment procedures. Course includes maintenance and light repair of hybrid vehicles, heating, ventilation, and air conditioning as well as supplemental inflatable restraints.
10602111 Advanced Electrical Automotive (4 cr.)	Provides students with the fundamental knowledge needed to diagnose, service, and repair electrical and electronic systems—computer fundamentals, network communications, power accessories, and air bags. Systems include anti-lock brakes, vehicle stability enhancements, and electronic steering and suspension systems. Students will perform diagnostic procedures and apply problem-solving techniques associated with electronically controlled systems.
10602113 Alternative Fuels (4 cr.)	Prepares students with the knowledge needed to service and test the growing number of hybrid vehicles. Emphasizes safety precautions used during testing of high-voltage and electrical machines. This course will also cover compressed natural gas and diesel vehicles.
10602114 Automotive Heating, Ventilation, and Air Conditioning (4 cr.)	Provides the student with the knowledge and skills needed to service and repair heating, cooling, and air conditioning systems. Automatic and dual zone climate control systems will also be covered. Students will learn and practice proper handling of R134a/ 1234YF refrigerants and will also be Federal 609 certified to perform automotive refrigerant repairs.
10602117 Automatic Transaxles and Transmissions (4 cr.)	Focuses on developing the skills needed to diagnose, service, and repair automatic transmissions/transaxles including overhaul procedures.
10602118 Engine Mechanical (4 cr.)	Focuses on developing the skills needed to diagnose, service and repair internal combustion engines. Emphasis is placed on in-vehicle repairs including engine lubrication systems and out-of-vehicle engine repair including overhaul procedures.

Course Descriptions

10602121 Manual Transmissions (4 cr.)	Focuses on developing the skills needed to diagnose, service, and repair clutches, manual transmissions/transaxle, differentials, four-wheel drive/all-wheel drive, and drive axles.
10602126 Powertrain Management 1 (4 cr.)	Provides students with fundamental knowledge in automotive computer controlled engine management systems. Focuses on developing the skills needed to diagnose, service, and repair fuel, emission, and ignition control systems. Students will perform diagnostic procedures and apply problem-solving techniques associated with engine performance and drivability.
10602129 Powertrain Management 2 (4 cr.)	Teaches students to diagnose and repair engine performance concerns. This course will focus on computerized engine management systems, enhanced emissions, and engine control sensors.
10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
10806173 Applied Science for Transportation (1 cr.)	Engages students in hands-on activities relating the science principles involved with technical measurement, heating and cooling, fluid properties, electricity, and mechanical advantage to applications in the transportation industry.
10809199 Psychology of Human Relations (3 cr.)	Explores the relationship between the general principles of psychology and our everyday lives. Students are given the opportunity to achieve a deepened sense of awareness of themselves and others. This understanding enables students to improve their relationships with others at work, in the family, and in society.
405 - Auto Body - Chassis And Auto Collision Repair and Refinishing	
10405150 Refinishing Set-up and Safety (2 cr.)	Focuses on different refinishing spray gun set-up, operation, and maintenance. There is an emphasis on personal protection, as well as the environmental regulations regarding working with refinishing materials. Students are also introduced to buffing and polishing in this course.
10405151 Part Removal and Installation (3 cr.)	Focuses on developing the knowledge and skills necessary for interior and exterior part removal, storage, replacement, and installation. Students are also introduced to repair planning.
10405152 Steel MIG Welding (2 cr.)	Focuses on developing the knowledge and skills necessary for MIG welding steel in various automotive collision repair scenarios. Students are also introduced to the process of sectioning.

Course Descriptions

10405153 Basic Nonstructural Repair (3 cr.)	Focuses on developing the knowledge and skills necessary for understanding sheet metal characteristics, repair sequencing, and making repair versus replace decisions. Students are introduced to the process of straightening steel exterior panels.
10405154 Advanced Nonstructural Repair (2 cr.)	Focuses on developing the knowledge and skills necessary for advanced straightening of steel in complex areas as well as straightening aluminum exterior panels.
10405155 Plastic Repair (2 cr.)	Focuses on developing the knowledge and skills necessary for repairing the variety of plastics used on automotive vehicles.
10405156 Surface Preparation and Masking (2 cr.)	Focuses on developing the knowledge and skills necessary for masking and prepping surfaces in various refinishing scenarios.
10405157 Basic Refinishing Application (3 cr.)	Focuses on developing the knowledge and skills necessary for applying automotive refinish materials.
10405158 Advanced Refinishing Application (3 cr.)	Focuses on developing the knowledge and skills necessary for advanced application of automotive refinish materials, including blending and tri-stage finishes.
10405159 Refinishing Color Theory (2 cr.)	Focuses on developing the knowledge and skills necessary for tinting automotive refinish materials, which includes an in-depth look at color theory.
10405160 Estimating (3 cr.)	Focuses on developing skills needed to write collision analysis sheets. Learning how to identify the parts, materials, and labor needed to repair collision damaged vehicles will be covered.
10405161 Advanced Joining Techniques (2 cr.)	Focuses on developing the knowledge and skills necessary for MIG welding aluminum, along with squeeze type resistance spot welding (STRSW), weld-bonding, and rivet-bonding.
10405162 Collision Structural Damage Analysis (3 cr.)	Focuses on developing skills and knowledge needed to anchor and measure collision damaged vehicles and the identification of parts and materials that are needed for proper repair. Perform structural realignment and structural part replacement on damaged vehicles.
10405163 Welded Panel Replacement (4 cr.)	Focuses on developing skills needed to perform damage analysis and replacement of outer welded-on panels on collision damaged vehicles.
10405164 Collision Heating & Cooling (2 cr.)	Focuses on developing the skills needed to diagnose, service, and repair collision damaged climate control systems including heating, cooling, and air distribution. Students will learn proper handling of refrigerants and will be Federal 609 certified to perform automotive refrigerant repair.
10405165 Collision Basic Electrical (2 cr.)	Focuses on developing the skills needed to diagnose and repair electrical and electronic systems on collision damaged vehicles. Develop skills to service batteries, starting, charging, and lighting systems.

Course Descriptions

10405166 Collision Avoidance (2 cr.)	Focuses on developing skills needed to replace components on collision avoidance safety systems, airbags, and recalibrate advanced driver-assistance systems (ADAS).
10405167 Collision Alignment (2 cr.)	Focuses on developing the skills needed to diagnose and replace steering and suspension components on collision damaged vehicles. Students will also complete a wheel alignment.
10602100 Automotive Maintenance and Light Repair 1 (4 cr.)	Focuses on developing skills in professionalism, safety, and the use of basic and power tools. Students are introduced to the automotive service industry and learn to use both comprehensive and manufacturer's service information to perform vehicle maintenance in 9 Automotive Service Excellence (ASE) areas.
10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
10809172 Introduction to Diversity Studies (3 cr.)	This course introduces the study of diversity from a local to a global perspective using a holistic, interdisciplinary approach that encourages exploration and prepares students to work in a diverse environment. The course introduces basic diversity concepts, examines the impact of bias and power differentials among groups, explores the use of culturally responsive communication strategies, and compares forces that shape diversity in an international context.
405 - Auto Body - Chassis And Vehicle Refinishing & Repair Technology	
10405150 Refinishing Set-up and Safety (2 cr.)	Focuses on different refinishing spray gun set-up, operation, and maintenance. There is an emphasis on personal protection, as well as the environmental regulations regarding working with refinishing materials. Students are also introduced to buffing and polishing in this course.
10405151 Part Removal and Installation (3 cr.)	Focuses on developing the knowledge and skills necessary for interior and exterior part removal, storage, replacement, and installation. Students are also introduced to repair planning.
10405152 Steel MIG Welding (2 cr.)	Focuses on developing the knowledge and skills necessary for MIG welding steel in various automotive collision repair scenarios. Students are also introduced to the process of sectioning.
10405153 Basic Nonstructural Repair (3 cr.)	Focuses on developing the knowledge and skills necessary for understanding sheet metal characteristics, repair sequencing, and making repair versus replace decisions. Students are introduced to the process of straightening steel exterior panels.

Course Descriptions

10405154 Advanced Nonstructural Repair (2 cr.)	Focuses on developing the knowledge and skills necessary for advanced straightening of steel in complex areas as well as straightening aluminum exterior panels.
10405155 Plastic Repair (2 cr.)	Focuses on developing the knowledge and skills necessary for repairing the variety of plastics used on automotive vehicles.
10405156 Surface Preparation and Masking (2 cr.)	Focuses on developing the knowledge and skills necessary for masking and prepping surfaces in various refinishing scenarios.
10405157 Basic Refinishing Application (3 cr.)	Focuses on developing the knowledge and skills necessary for applying automotive refinish materials.
10405158 Advanced Refinishing Application (3 cr.)	Focuses on developing the knowledge and skills necessary for advanced application of automotive refinish materials, including blending and tri-stage finishes.
10405159 Refinishing Color Theory (2 cr.)	Focuses on developing the knowledge and skills necessary for tinting automotive refinish materials, which includes an in-depth look at color theory.
10405160 Estimating (3 cr.)	Focuses on developing skills needed to write collision analysis sheets. Learning how to identify the parts, materials, and labor needed to repair collision damaged vehicles will be covered.
10405161 Advanced Joining Techniques (2 cr.)	Focuses on developing the knowledge and skills necessary for MIG welding aluminum, along with squeeze type resistance spot welding (STRSW), weld-bonding, and rivet-bonding.
10405162 Collision Structural Damage Analysis (3 cr.)	Focuses on developing skills and knowledge needed to anchor and measure collision damaged vehicles and the identification of parts and materials that are needed for proper repair. Perform structural realignment and structural part replacement on damaged vehicles.
10405163 Welded Panel Replacement (4 cr.)	Focuses on developing skills needed to perform damage analysis and replacement of outer welded-on panels on collision damaged vehicles.
10405164 Collision Heating & Cooling (2 cr.)	Focuses on developing the skills needed to diagnose, service, and repair collision damaged climate control systems including heating, cooling, and air distribution. Students will learn proper handling of refrigerants and will be Federal 609 certified to perform automotive refrigerant repair.
10405165 Collision Basic Electrical (2 cr.)	Focuses on developing the skills needed to diagnose and repair electrical and electronic systems on collision damaged vehicles. Develop skills to service batteries, starting, charging, and lighting systems.
10405166 Collision Avoidance (2 cr.)	Focuses on developing skills needed to replace components on collision avoidance safety systems, airbags, and recalibrate advanced driver-assistance systems (ADAS).

Course Descriptions

10405167 Collision Alignment (2 cr.)	Focuses on developing the skills needed to diagnose and replace steering and suspension components on collision damaged vehicles. Students will also complete a wheel alignment.
10602100 Automotive Maintenance and Light Repair 1 (4 cr.)	Focuses on developing skills in professionalism, safety, and the use of basic and power tools. Students are introduced to the automotive service industry and learn to use both comprehensive and manufacturer's service information to perform vehicle maintenance in 9 Automotive Service Excellence (ASE) areas.
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
10804113 College Technical Math 1A (3 cr.)	Topics include: solving linear equations; graphing; percent; proportions; measurement systems; computational geometry; and right triangle trigonometry. Emphasis will be on the application of skills to technical problems. Successful completion of College Technical Mathematics 1A and College Technical Mathematics 1B is the equivalent of College Technical Mathematics 1.
10809172 Introduction to Diversity Studies (3 cr.)	This course introduces the study of diversity from a local to a global perspective using a holistic, interdisciplinary approach that encourages exploration and prepares students to work in a diverse environment. The course introduces basic diversity concepts, examines the impact of bias and power differentials among groups, explores the use of culturally responsive communication strategies, and compares forces that shape diversity in an international context.
10809199 Psychology of Human Relations (3 cr.)	Explores the relationship between the general principles of psychology and our everyday lives. Students are given the opportunity to achieve a deepened sense of awareness of themselves and others. This understanding enables students to improve their relationships with others at work, in the family, and in society.

409 - Wood Manufacturing Woodworking Technician 1

Course Descriptions

31409302 Material Properties and Applications (2 cr.)

Introduce the physical properties of wood and related woodworking materials. Identify wood specie and the nature of wood. Explore adhesives and abrasives commonly used in the woodworking industry. Clamping techniques along with the use and identification of metal fasteners for the woodworking industry will be covered in this course.

31409317 Layout and Sawing Operations (2 cr.)

Explore basic layout and measurement practices using both English and metric units. Exposure to woodworking machines designed for sawing with strong emphasis given to machining to specification. Develop safe and efficient machining habits associated with sawing wood.

31409319 Milling Operations (2 cr.)

Safely and efficiently perform machining tasks associated with milling wood. An emphasis is given to the lumber milling procedures involved with converting rough lumber to material that is machined flat, square and to a specified thickness, width, and length. Exposure to the portable hand router and routing practices.

409 - Wood Manufacturing Woodworking Technician 2

31409303 Sanding and Panel Processing (2 cr.)

Exposure to machines used for panel processing and machines used in the sanding process. Safely and efficiently perform machining tasks on a sliding table panel saw. Use various portable sanders, stationary sanders, and the wide belt sander. A wooden toolbox will be built.

31409321 Shaping and Molding (3 cr.)

Operate production style woodworking machines. Safely and efficiently perform machining operations on a gang-feed rip saw, an S4S milling machine, a CNC mortiser & tenoner, and a 6-headed molder. Proper set-up and an in-depth exploration into the numerous operations that can be performed on a wood shaper.

409 - Wood Manufacturing Woodworking Technology

31409301 Drafting for the Woodworking Industry (2 cr.)

Create computer generated drawings using AutoCAD software. Explore the thought processes and concepts necessary for creating accurate, dimensioned working drawings for use in the woodworking industry.

31409302 Material Properties and Applications (2 cr.)

Introduce the physical properties of wood and related woodworking materials. Identify wood specie and the nature of wood. Explore adhesives and abrasives commonly used in the woodworking industry. Clamping techniques along with the use and identification of metal fasteners for the woodworking industry will be covered in this course.

31409303 Sanding and Panel Processing (2 cr.)

Exposure to machines used for panel processing and machines used in the sanding process. Safely and efficiently perform machining tasks on a sliding table panel saw. Use various portable sanders, stationary sanders, and the wide belt sander. A wooden toolbox will be built.

Course Descriptions

31409317 Layout and Sawing Operations (2 cr.)	Explore basic layout and measurement practices using both English and metric units. Exposure to woodworking machines designed for sawing with strong emphasis given to machining to specification. Develop safe and efficient machining habits associated with sawing wood.
31409319 Milling Operations (2 cr.)	Safely and efficiently perform machining tasks associated with milling wood. An emphasis is given to the lumber milling procedures involved with converting rough lumber to material that is machined flat, square and to a specified thickness, width, and length. Exposure to the portable hand router and routing practices.
31409321 Shaping and Molding (3 cr.)	Operate production style woodworking machines. Safely and efficiently perform machining operations on a gang-feed rip saw, an S4S milling machine, a CNC mortiser & tenoner, and a 6-headed molder. Proper set-up and an in-depth exploration into the numerous operations that can be performed on a wood shaper.
31409324 Frameless Cabinetry (3 cr.)	Produce frameless cabinetry. Explore panel layout and processing associated with this style of cabinet construction. Learn construction doweling and line-boring specifications along with the techniques for installing European style hinges and drawer slides. Processes associated with the cutting, application, and routing of plastic laminates will also be covered.
31409326 Veneering, Finishing & Joinery Methods (3 cr.)	Explore woodworking processes that must efficiently combine multiple steps and/or multiple materials. Use solvent-based and water-based finishing materials. Gain experience in cutting, seaming, and laminating veneer. Create jigs and fixtures to make the machining of various types of joinery more efficient, accurate, and safe.
31409327 Furniture Exploration 1 (3 cr.)	Construct a furniture piece using leg-and-rail style joinery. A minimum of two identical projects must be built to emphasize the importance of machining to specification. Learners will create a component cut-list, machining process sequence list and an estimated timeline for the completion of the furniture project.
31409328 Furniture Exploration 2 (3 cr.)	Construct a furniture piece using carcass style joinery. A minimum of two identical projects must be built to emphasize the importance of machining to specification. Learners will create a component cut-list, machining process sequence list and an estimated timeline for the completion of the furniture project.
31409330 Blueprint Reading for Woodworking Industry (2 cr.)	Read and interpret blueprints. Extract dimensions, machining details, and material and construction specifications from a blueprint. Utilize symbols, terminology, and the graphic language commonly used in the woodworking industry. Determine direct costs and overhead expenses.

Course Descriptions

- 31409331 CNC Router Operation (3 cr.)** Program and operate a CNC controlled router. Explore CNC router operation by reading and writing G-Code. Load machine programs into the router and become familiar with the multitude of machining operations a CNC router can perform.
- 31409332 Traditional Cabinetry (2 cr.)** Exposure to the construction methods and processes that are associated with traditionally built, face-frame style cabinets. Construct a “beaded-inset” face-frame into which learners will then hang an inset door using traditional butt hinges. Learners will also gain exposure to solid-surface fabrication techniques.
- 31409352 Tool Design and Maintenance (1 cr.)** Explore the design and edge geometry associated with cutting tools. Learners will sharpen various cutting tools and learn how to select the best cutting tool for a given application. Routine machine maintenance will also be explored.
- 31804307 Math for the Trades (2 cr.)** Focuses on the math skills needed for various trades. Topics include arithmetic fundamentals, percent and proportion applications, the metric system, conversions, practical geometry, measurement applications, signed numbers and formula evaluation. Micrometer, equation solving and standard rule measurement units are included as needed. Scientific calculator use is introduced as needed.
- 31890307 Workplace Reality (2 cr.)** Focuses on developing skills in interpersonal communication, teamwork and meeting practical workplace requirements. Topics include quality control, team building, statistical process control, report writing, interview and report writing skills, diversity, problem solving, conflict resolution and OSHA requirements.

410 - Residential Building Residential Building Construction

- 10449173 Construction Safety with OSHA 10 (1 cr.)** Introduces students to common construction hazards. Topics include OSHA’s Focus Four Hazards of falls from heights, electrocutions, struck-by hazards, and caught-between hazards, safe ladder usage, fire protection and prevention, scaffolding safety, personal protective equipment, health hazards in construction, and excavation hazards.
- 31409317 Layout and Sawing Operations (2 cr.)** Explore basic layout and measurement practices using both English and metric units. Exposure to woodworking machines designed for sawing with strong emphasis given to machining to specification. Develop safe and efficient machining habits associated with sawing wood.
- 31410315 Introduction to AutoCAD-Construction (2 cr.)** Introduces the student to basic AutoCAD commands and techniques. Instruction during the first half of the course focuses on basic drawing and editing commands. During the second half of the course, students will use AutoCAD software to prepare, dimension, annotate and plot various residential construction drawings and details.

Course Descriptions

31410330 Exterior Finish Principles (RBC cr.) (2 cr.)

Introduces the tools, materials and methods to complete the exterior covering and finish of a house. Topics include roof coverings, mechanical flashing, fascia and soffit systems, windows and door installation, siding and exterior detailing. Students must demonstrate proficiency with related tools and satisfactorily complete lab exercises before engaging in project activity.

31410331 Interior Closure Principles (RBC cr.) (2 cr.)

Focuses on the principles of temperature control, moisture control and interior wall finish. Topics of study include insulation materials, ventilation methods, building wraps, vapor barriers, sheetrock installation, drywall finish and drywall repair. Students learn about current building science for avoiding common building problems such as condensation, mold and ice dams.

31410333 Interior Finish Principles, Basic (RBC cr.) (3 cr.)

An overview of the residential millwork industry. Students gain knowledge of millwork manufacturing, product distribution and profile recognition in classroom assignments. Lab activities include demonstration and extensive practice installation of jambs, doors and casing. Emphasis is on developing superior carpentry skills in a lab setting prior to completion of the student project.

31410334 Interior Finish Principles, Intermediate (RBC cr.) (3 cr.)

Continues the study of interior trim materials undertaken in Interior Finish Principles, Basic. In the classroom, students learn about stair parts, interpret cabinet drawings, evaluate countertop materials and study the basics of hardwood flooring installation. In the lab, students receive a demonstration of hardwood flooring installation and develop skill installing base and crown molding.

31410335 Blueprint Reading & Estimating-Construction (2 cr.)

Combines a study of residential blueprint reading and residential construction estimating. Students learn to estimate the labor and material necessary to construct a house by examining all plans, elevations and details that are commonly found in residential drawings. Students will practice both manual and computer-based estimating techniques as they work with spreadsheets and published data for estimating residential construction costs.

31410352 Frame Construction Principles (RBC cr.) (3 cr.)

Examines the theory and practice of residential framing techniques. Topics include light-frame construction of floors, walls and roofs. Proper use of dimensional lumber, engineered lumber and panel sheathing is stressed. The Uniform Dwelling Code and manufacturers' literature is used to size load-carrying members and comply with applicable codes. In the lab, students practice laying out floors, stairs and walls. Students learn to use a framing square to calculate and lay out common types of rafters in completion of a roof mock-up.

Course Descriptions

31410354 Exterior Finish Project (RBC cr.) (3 cr.)	Challenges students to complete the exterior of a house or other projects on a construction site. Students will install roofing, aluminum soffit systems, windows and manufacturing siding. Emphasis is on flashing details which maintain the integrity of a building's drainage plane and fastening details which provide for differential movement of modern manufactured materials.
31410356 Interior Closure Project (RBC cr.) (3 cr.)	Offers the opportunity to complete the insulation, vapor barrier and drywall of the on-site student project. Students use principles learned in lab and classroom activities to select, cut, fasten, install and finish interior materials according to accepted trade standards.
31410358 Interior Finish Project, Basic (RBC cr.) (3 cr.)	Develops interior finish competence as students work independently to complete individual tasks at the site. Students receive hands-on experience installing underlayment, window extension jambs, door jambs, interior doors and casing in the student project.
31410360 Interior Finish Project, Intermediate (RBC cr.) (3 cr.)	Further develops finish carpentry skills and production efficiency through installation of moulding, cabinets and countertop material in completion of the student construction project. Students are shown how to recognize, evaluate and resolve common millwork installation problems arising at the construction project.
31410362 Frame Construction Project (RBC cr.) (3 cr.)	Provides students with on-site framing experience. Working in groups of 3-4 students, members plan, lay out and frame assigned sections of the floor, wall and roof systems of a house. Safe work practices, thorough planning and attention to detail are stressed in all phases of frame construction.
31410363 Residential Building Codes and Regulations (RBC cr.) (1 cr.)	Explores codes, regulations and specifications governing construction of residential buildings. Students learn to locate and interpret technical information available in the Wisconsin Uniform Dwelling Code, county zoning regulations, local covenants and product literature. Following classroom review and discussion, students will be evaluated on their ability to comply with rules and regulations during actual building construction.
31531301 First Aid/CPR (1 cr.)	Presents and evaluates basic first aid skills necessary to care for the ill/injured until medical help arrives. Covers use of Automated External Defibrillator (AED) and CPR for all ages. Students receive an AHA Heartsaver CPR card and an FVTC First Aid certificate upon course completion.
31890307 Workplace Reality (2 cr.)	Focuses on developing skills in interpersonal communication, teamwork and meeting practical workplace requirements. Topics include quality control, team building, statistical process control, report writing, interview and report writing skills, diversity, problem solving, conflict resolution and OSHA requirements.

Course Descriptions

412 - Combustion Diesel Construction Equipment Service Technician

- 10412129 Diesel Equipment Internship (1 cr.)** Provides students with work experience on actual vehicles in area shops.
- 10412141 FABTECH Air Conditioning (2 cr.)** Provides students with the knowledge and skills to service and repair heating and air conditioning systems. Hands-on activities include charging, discharging and leak detection. Students will receive federal AG-136 certification. This course is part of a training program called FABTECH, which is developed specifically for Fabick Cat, and participants are subject to screening by Fabick Cat, the sponsoring company.
- 10412142 FABTECH Preventive Maint & Equipment Repair (5 cr.)** Focuses on the inspection and lubrication of a variety of equipment. Students will collect oil samples and complete general repairs and adjustments to a variety of small construction equipment. This course is part of a training program called FABTECH, which is developed specifically for Fabick Cat, and participants are subject to screening by Fabick Cat, the sponsoring company.
- 10412143 FABTECH Shop Practices, Introduction to (4 cr.)** Focuses on the safe and proper operation of hand tools and shop equipment. Students learn the proper lifting and blocking procedures for a variety of equipment, following MSHA and OSHA regulations. Students will learn basic first aid and become familiar with shop operations. This course is part of a training program called FABTECH, which is developed specifically for Fabick Cat, and participants are subject to screening by Fabick Cat, the sponsoring company.
- 10412145 FABTECH Hydraulic Systems 2 (5 cr.)** Focuses on the skills needed to diagnose, service and repair hydraulic systems found on off-road construction equipment. Students will learn how to diagnose pumps, valves, cylinders, motors and electronic controlled valves. This course is part of a training program called FABTECH, which is developed specifically for Fabick Cat, and participants are subject to screening by Fabick Cat, the sponsoring company.
- 10412146 FABTECH Construction Drive Train 1 (5 cr.)** Focuses on the operation and maintenance of the power train. Students learn the procedures for overhauling, adjusting and troubleshooting heavy duty transmissions and various final drives. This course is part of a training program called FABTECH, which is developed specifically for Fabick Cat, and participants are subject to screening by Fabick Cat, the sponsoring company.
- 10412147 FABTECH Construction Drive Train 2 (4 cr.)** Focuses on failure analysis to determine root cause of various drive train system failures. Students will learn how to interpret codes used to identify errors within different power train computer controlled systems. This course is part of a training program called FABTECH, which is developed specifically for Fabick Cat, and participants are subject to screening by Fabick Cat, the sponsoring company.

Course Descriptions

10412148 FABTECH Engine Rebuilding (5 cr.)	Teaches students to disassemble, identify each part, measure all wear points and make reuse recommendations, analyze failed components, and reassemble two electronic controlled diesel engines. Component analysis, function and operation theories of the diesel engine are lecture topics studied.
10412150 FABTECH Engine Testing & Diagnostics (5 cr.)	Focuses on key troubleshooting skills and methodology. Engine system testing procedures and tools are used to analyze symptom-based engine problems. Application of computer diagnostic tools is employed in actual live testing situations. Engine operation will also be part of this course.
10412151 FABTECH Electrical 1 (5 cr.)	Introduces the student to basic electrical and electronic fundamentals needed by a technician to properly diagnose and repair complex electrical and electronic systems installed in various Caterpillar machines. This course is part of a training program called FABTECH, which is developed specifically for Fabick Cat, and participants are subject to screening by Fabick Cat, the sponsoring company.
10412157 FABTECH Fuel Systems 2 (4 cr.)	Enhances the ability to understand advanced fuel systems to properly diagnose, tune-up, repair and replace components in complex fuel systems installed in Caterpillar engines.
10412164 FABTECH Hydraulic Systems 1 (3 cr.)	Focuses on basic hydraulic principles and systems. Hands-on activities include replacing hoses, cylinders and performing minor maintenance on hydraulic pumps and motors. This course is part of a training program called FABTECH, which is developed specifically for Fabick Cat, and participants are subject to screening by Fabick Cat, the sponsoring company.
10412172 FABTECH Fuel Systems 1 (3 cr.)	Introduces the student to the various fuel systems and teaches the fundamentals needed by a technician to properly diagnose and repair complex fuel systems installed in various Caterpillar machines.
10442103 FABTECH Applied Welding (2 cr.)	Acquaints students with the common welding techniques and procedures for arc and oxyacetylene welding in all positions. Topics include fusion welding, brazing, cutting, metal identification, selection of electrodes and American Welding Society symbols.
31801318F FABTECH Applied Communication (2 cr.)	Focuses on technical vocabulary, business writing, job search strategies, interpersonal communication and oral presentation skills through individual and group activities. Open enrollment for all students. It is recommended, but not required, that the student have basic computer skills, HS GPA 2.75+ OR ACPL Read 54+/Sent 83+, Next Gen Read 250+/Sent 237+, ACT Read 18+/Engl 15+ OR Read Prep 10838105/Sent Prep 74851745 OR not pursuing a degree. Personal/professional development students who have not taken the ACCUPLACER test need to consult with their instructor during the first class..

412 - Combustion Diesel Engine Service Technician (FABTECH)

Course Descriptions

10412141 FABTECH Air Conditioning (2 cr.)	Provides students with the knowledge and skills to service and repair heating and air conditioning systems. Hands-on activities include charging, discharging and leak detection. Students will receive federal AG-136 certification. This course is part of a training program called FABTECH, which is developed specifically for Fabick Cat, and participants are subject to screening by Fabick Cat, the sponsoring company.
10412142 FABTECH Preventive Maint & Equipment Repair (5 cr.)	Focuses on the inspection and lubrication of a variety of equipment. Students will collect oil samples and complete general repairs and adjustments to a variety of small construction equipment. This course is part of a training program called FABTECH, which is developed specifically for Fabick Cat, and participants are subject to screening by Fabick Cat, the sponsoring company.
10412143 FABTECH Shop Practices, Introduction to (4 cr.)	Focuses on the safe and proper operation of hand tools and shop equipment. Students learn the proper lifting and blocking procedures for a variety of equipment, following MSHA and OSHA regulations. Students will learn basic first aid and become familiar with shop operations. This course is part of a training program called FABTECH, which is developed specifically for Fabick Cat, and participants are subject to screening by Fabick Cat, the sponsoring company.
10412148 FABTECH Engine Rebuilding (5 cr.)	Teaches students to disassemble, identify each part, measure all wear points and make reuse recommendations, analyze failed components, and reassemble two electronic controlled diesel engines. Component analysis, function and operation theories of the diesel engine are lecture topics studied.
10412150 FABTECH Engine Testing & Diagnostics (5 cr.)	Focuses on key troubleshooting skills and methodology. Engine system testing procedures and tools are used to analyze symptom-based engine problems. Application of computer diagnostic tools is employed in actual live testing situations. Engine operation will also be part of this course.
10412151 FABTECH Electrical 1 (5 cr.)	Introduces the student to basic electrical and electronic fundamentals needed by a technician to properly diagnose and repair complex electrical and electronic systems installed in various Caterpillar machines. This course is part of a training program called FABTECH, which is developed specifically for Fabick Cat, and participants are subject to screening by Fabick Cat, the sponsoring company.
10412157 FABTECH Fuel Systems 2 (4 cr.)	Enhances the ability to understand advanced fuel systems to properly diagnose, tune-up, repair and replace components in complex fuel systems installed in Caterpillar engines.

Course Descriptions

10412164 FABTECH Hydraulic Systems 1 (3 cr.)	Focuses on basic hydraulic principles and systems. Hands-on activities include replacing hoses, cylinders and performing minor maintenance on hydraulic pumps and motors. This course is part of a training program called FABTECH, which is developed specifically for Fabick Cat, and participants are subject to screening by Fabick Cat, the sponsoring company.
10412172 FABTECH Fuel Systems 1 (3 cr.)	Introduces the student to the various fuel systems and teaches the fundamentals needed by a technician to properly diagnose and repair complex fuel systems installed in various Caterpillar machines.
10442103 FABTECH Applied Welding (2 cr.)	Acquaints students with the common welding techniques and procedures for arc and oxyacetylene welding in all positions. Topics include fusion welding, brazing, cutting, metal identification, selection of electrodes and American Welding Society symbols.
31801318F FABTECH Applied Communication (2 cr.)	Focuses on technical vocabulary, business writing, job search strategies, interpersonal communication and oral presentation skills through individual and group activities. Open enrollment for all students. It is recommended, but not required, that the student have basic computer skills, HS GPA 2.75+ OR ACPL Read 54+/Sent 83+, Next Gen Read 250+/Sent 237+, ACT Read 18+/Engl 15+ OR Read Prep 10838105/Sent Prep 74851745 OR not pursuing a degree. Personal/professional development students who have not taken the ACCUPLACER test need to consult with their instructor during the first class..

412 - Combustion Diesel Equipment Mechanic

10412102 Introduction to Diesel Technology (4 cr.)	Introduces the diesel shop environment, and emphasizes shop safety and general shop practices. Introduces over the road commercial motor vehicle preventative maintenance, and prepares students for success in the core diesel program classes.
10412103 Heavy Duty Diesel Steering & Suspension (4 cr.)	Covers maintenance, repair, and minor diagnostics of heavy duty steering & suspension systems used on over the road commercial motor vehicles.
10412104 Heavy Duty Diesel Engine Maintenance (4 cr.)	Covers maintenance, repair, and minor diagnostics on heavy duty diesel engines used in over the road commercial motor vehicles.
10412105 Heavy Duty Diesel HVAC & Cab Systems (4 cr.)	Covers maintenance, repair, and minor diagnostics on heating, ventilation, and air conditioning systems used in heavy duty over the road commercial motor vehicles. Students learn to maintain and repair cab components used on over the road commercial motor vehicles, and prepare for the Federal EPA 609 certification test.

Course Descriptions

10412106 Heavy Duty Diesel Drivetrains (4 cr.)	Covers maintenance, repair, and minor diagnostics on drivetrains used in heavy duty over the road commercial motor vehicles. Students service clutches, transmissions, differentials, drivelines, and wheel ends used on over the road commercial motor vehicles.
10412107 Heavy Duty Diesel Air & Hydraulic Brakes (4 cr.)	Covers maintenance, repair, and minor diagnostics on air and hydraulic brake system used on over the road commercial motor vehicles.
10412108 Heavy Duty Diesel Foundation Brakes (4 cr.)	Covers maintenance, repair, and minor diagnostics on foundation brake systems used on over the road commercial motor vehicles.
10412109 Heavy Duty Diesel Electrical Systems (4 cr.)	Covers maintenance, repair, and minor diagnostics on vehicle electrical system components used on over the road commercial motor vehicles.
10412124 Heavy Duty Diesel Capstone (1 cr.)	Perform preventive maintenance inspections, service, and repair of commercial motor vehicles. Students will also complete Department of Transportation annual inspections.
10442120 Related Welding (1 cr.)	Prepares students with the common techniques and procedures for SMAW, GMAW, GTAW, and FCAW welding in a repair or machine shop environment. Topics include welding metal, cutting metal with plasma and oxy-fuel, and metal identification. Laboratory activities will provide the student with hands-on practice.

412 - Combustion Diesel Equipment Technician with CDL

10412102 Introduction to Diesel Technology (4 cr.)	Introduces the diesel shop environment, and emphasizes shop safety and general shop practices. Introduces over the road commercial motor vehicle preventative maintenance, and prepares students for success in the core diesel program classes.
10412103 Heavy Duty Diesel Steering & Suspension (4 cr.)	Covers maintenance, repair, and minor diagnostics of heavy duty steering & suspension systems used on over the road commercial motor vehicles.
10412104 Heavy Duty Diesel Engine Maintenance (4 cr.)	Covers maintenance, repair, and minor diagnostics on heavy duty diesel engines used in over the road commercial motor vehicles.
10412105 Heavy Duty Diesel HVAC & Cab Systems (4 cr.)	Covers maintenance, repair, and minor diagnostics on heating, ventilation, and air conditioning systems used in heavy duty over the road commercial motor vehicles. Students learn to maintain and repair cab components used on over the road commercial motor vehicles, and prepare for the Federal EPA 609 certification test.
10412106 Heavy Duty Diesel Drivetrains (4 cr.)	Covers maintenance, repair, and minor diagnostics on drivetrains used in heavy duty over the road commercial motor vehicles. Students service clutches, transmissions, differentials, drivelines, and wheel ends used on over the road commercial motor vehicles.

Course Descriptions

10412107 Heavy Duty Diesel Air & Hydraulic Brakes (4 cr.)	Covers maintenance, repair, and minor diagnostics on air and hydraulic brake system used on over the road commercial motor vehicles.
10412108 Heavy Duty Diesel Foundation Brakes (4 cr.)	Covers maintenance, repair, and minor diagnostics on foundation brake systems used on over the road commercial motor vehicles.
10412109 Heavy Duty Diesel Electrical Systems (4 cr.)	Covers maintenance, repair, and minor diagnostics on vehicle electrical system components used on over the road commercial motor vehicles.
10412110 Heavy Duty Diesel Computer Controls (4 cr.)	Introduces computer control systems used in over the road commercial motor vehicles. Students learn to diagnose and repair current computer control systems.
10412116 Heavy Duty Diesel Advanced Drivetrain (4 cr.)	Covers diagnosing and repair of over the road commercial vehicle drivetrains. Students diagnose and repair manual, automated, and automatic transmissions.
10412120 Heavy Duty Diesel Advanced Engine Repair (4 cr.)	Covers major repair and diagnostics on heavy duty diesel engines found in modern commercial motor vehicles. Students disassemble, repair, assemble, and perform major diagnostics.
10412123 Heavy Duty Diesel Engine Systems (4 cr.)	Covers diagnosing and repair of over the road commercial motor vehicle engine systems. Students perform engine diagnostics that relate to engine performance issues and/or customer complaints.
10412124 Heavy Duty Diesel Capstone (1 cr.)	Perform preventive maintenance inspections, service, and repair of commercial motor vehicles. Students will also complete Department of Transportation annual inspections.
10442120 Related Welding (1 cr.)	Prepares students with the common techniques and procedures for SMAW, GMAW, GTAW, and FCAW welding in a repair or machine shop environment. Topics include welding metal, cutting metal with plasma and oxy-fuel, and metal identification. Laboratory activities will provide the student with hands-on practice.
30458301 Commercial Driver's License-Theory (2 cr.)	Covers Federal Motor Carrier Safety Regulations (FMCSRs) information, basic operation, vehicle review, and operating guidelines for a Class A commercial combination motor vehicle. Additional topics include safe operating procedures and advanced operating practices.
30458302 Class A CDL-Behind the Wheel Range (3 cr.)	Covers behind the wheel activities including the operation of a combination commercial motor vehicle. Driving exercises related to basic vehicle control skills and mastery of basic maneuvers, necessary to operate the vehicle safely, are conducted. Proper techniques of vehicle inspections, backing exercises, coupling and uncoupling of a Class A commercial combination motor vehicle, are developed.

Course Descriptions

30458303 Class A CDL-Behind the Wheel Public Road (3 cr.) Covers behind the wheel activities driving a Class A commercial combination vehicle in a variety of public roadway situations and conditions. Road driving prepares the student with the necessary skills required to earn a Class A commercial driver's license (CDL).

30458304 Commercial Driver's License-Theory 2 (1 cr.) Covers federal Motor Carrier Safety Regulations (FMCSRs) information for a Class A commercial combination motor vehicle. Additional topics include professional operating procedures and specialty vehicle operations.

412 - Combustion Diesel Equipment Technology

10412102 Introduction to Diesel Technology (4 cr.) Introduces the diesel shop environment, and emphasizes shop safety and general shop practices. Introduces over the road commercial motor vehicle preventative maintenance, and prepares students for success in the core diesel program classes.

10412103 Heavy Duty Diesel Steering & Suspension (4 cr.) Covers maintenance, repair, and minor diagnostics of heavy duty steering & suspension systems used on over the road commercial motor vehicles.

10412104 Heavy Duty Diesel Engine Maintenance (4 cr.) Covers maintenance, repair, and minor diagnostics on heavy duty diesel engines used in over the road commercial motor vehicles.

10412105 Heavy Duty Diesel HVAC & Cab Systems (4 cr.) Covers maintenance, repair, and minor diagnostics on heating, ventilation, and air conditioning systems used in heavy duty over the road commercial motor vehicles. Students learn to maintain and repair cab components used on over the road commercial motor vehicles, and prepare for the Federal EPA 609 certification test.

10412106 Heavy Duty Diesel Drivetrains (4 cr.) Covers maintenance, repair, and minor diagnostics on drivetrains used in heavy duty over the road commercial motor vehicles. Students service clutches, transmissions, differentials, drivelines, and wheel ends used on over the road commercial motor vehicles.

10412107 Heavy Duty Diesel Air & Hydraulic Brakes (4 cr.) Covers maintenance, repair, and minor diagnostics on air and hydraulic brake system used on over the road commercial motor vehicles.

10412108 Heavy Duty Diesel Foundation Brakes (4 cr.) Covers maintenance, repair, and minor diagnostics on foundation brake systems used on over the road commercial motor vehicles.

10412109 Heavy Duty Diesel Electrical Systems (4 cr.) Covers maintenance, repair, and minor diagnostics on vehicle electrical system components used on over the road commercial motor vehicles.

10412110 Heavy Duty Diesel Computer Controls (4 cr.) Introduces computer control systems used in over the road commercial motor vehicles. Students learn to diagnose and repair current computer control systems.

10412116 Heavy Duty Diesel Advanced Drivetrain (4 cr.) Covers diagnosing and repair of over the road commercial vehicle drivetrains. Students diagnose and repair manual, automated, and automatic transmissions.

Course Descriptions

10412120 Heavy Duty Diesel Advanced Engine Repair (4 cr.)	Covers major repair and diagnostics on heavy duty diesel engines found in modern commercial motor vehicles. Students disassemble, repair, assemble, and perform major diagnostics.
10412123 Heavy Duty Diesel Engine Systems (4 cr.)	Covers diagnosing and repair of over the road commercial motor vehicle engine systems. Students perform engine diagnostics that relate to engine performance issues and/or customer complaints.
10412124 Heavy Duty Diesel Capstone (1 cr.)	Perform preventive maintenance inspections, service, and repair of commercial motor vehicles. Students will also complete Department of Transportation annual inspections.
10442120 Related Welding (1 cr.)	Prepares students with the common techniques and procedures for SMAW, GMAW, GTAW, and FCAW welding in a repair or machine shop environment. Topics include welding metal, cutting metal with plasma and oxy-fuel, and metal identification. Laboratory activities will provide the student with hands-on practice.
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
10804123 Math w Business Apps (3 cr.)	This course integrates algebraic concepts, proportions, percents, simple interest, compound interest, annuities, and basic statistics with business/consumer scenarios. It also applies math concepts to the purchasing/buying and selling processes.
10809166 Intro to Ethics: Theory & App (3 cr.)	This course provides a basic understanding of the theoretical foundations of ethical thought. Diverse ethical perspectives will be used to analyze and compare relevant issues. Students will critically evaluate individual, social and professional standards of behavior, and apply a systematic decision-making process to these situations.
10809199 Psychology of Human Relations (3 cr.)	Explores the relationship between the general principles of psychology and our everyday lives. Students are given the opportunity to achieve a deepened sense of awareness of themselves and others. This understanding enables students to improve their relationships with others at work, in the family, and in society.

412 - Combustion Diesel Power Generation & Marine Service Tech

Course Descriptions

10412129 Diesel Equipment Internship (1 cr.)	Provides students with work experience on actual vehicles in area shops.
10412141 FABTECH Air Conditioning (2 cr.)	Provides students with the knowledge and skills to service and repair heating and air conditioning systems. Hands-on activities include charging, discharging and leak detection. Students will receive federal AG-136 certification. This course is part of a training program called FABTECH, which is developed specifically for Fabick Cat, and participants are subject to screening by Fabick Cat, the sponsoring company.
10412142 FABTECH Preventive Maint & Equipment Repair (5 cr.)	Focuses on the inspection and lubrication of a variety of equipment. Students will collect oil samples and complete general repairs and adjustments to a variety of small construction equipment. This course is part of a training program called FABTECH, which is developed specifically for Fabick Cat, and participants are subject to screening by Fabick Cat, the sponsoring company.
10412143 FABTECH Shop Practices, Introduction to (4 cr.)	Focuses on the safe and proper operation of hand tools and shop equipment. Students learn the proper lifting and blocking procedures for a variety of equipment, following MSHA and OSHA regulations. Students will learn basic first aid and become familiar with shop operations. This course is part of a training program called FABTECH, which is developed specifically for Fabick Cat, and participants are subject to screening by Fabick Cat, the sponsoring company.
10412148 FABTECH Engine Rebuilding (5 cr.)	Teaches students to disassemble, identify each part, measure all wear points and make reuse recommendations, analyze failed components, and reassemble two electronic controlled diesel engines. Component analysis, function and operation theories of the diesel engine are lecture topics studied.
10412150 FABTECH Engine Testing & Diagnostics (5 cr.)	Focuses on key troubleshooting skills and methodology. Engine system testing procedures and tools are used to analyze symptom-based engine problems. Application of computer diagnostic tools is employed in actual live testing situations. Engine operation will also be part of this course.
10412151 FABTECH Electrical 1 (5 cr.)	Introduces the student to basic electrical and electronic fundamentals needed by a technician to properly diagnose and repair complex electrical and electronic systems installed in various Caterpillar machines. This course is part of a training program called FABTECH, which is developed specifically for Fabick Cat, and participants are subject to screening by Fabick Cat, the sponsoring company.

Course Descriptions

10412154 FABTECH Electrical Power Generation 1 (5 cr.)	Focuses on understanding the operation and maintenance required for electrical power generation equipment. It provides in-depth study and hands-on activities, including maintaining, troubleshooting, and repairing generator sets. Participants will learn how to test for proper operation and make appropriate adjustments. Topics include control panels, circuit breakers and voltage regulators.
10412155 FABTECH Electrical Power Generation 2 (4 cr.)	Focuses on the advanced skills needed to setup, troubleshoot, diagnose, and repair electrical power generation systems in accordance with Caterpillar guidelines. Students will learn these skills on Caterpillar electrical equipment that includes generators, switchgear, and control panels. This course is part of a training program called FABTECH, which is developed specifically for Fabick Cat, and participants are subject to screening by Fabick Cat, the sponsoring company.
10412157 FABTECH Fuel Systems 2 (4 cr.)	Enhances the ability to understand advanced fuel systems to properly diagnose, tune-up, repair and replace components in complex fuel systems installed in Caterpillar engines.
10412164 FABTECH Hydraulic Systems 1 (3 cr.)	Focuses on basic hydraulic principles and systems. Hands-on activities include replacing hoses, cylinders and performing minor maintenance on hydraulic pumps and motors. This course is part of a training program called FABTECH, which is developed specifically for Fabick Cat, and participants are subject to screening by Fabick Cat, the sponsoring company.
10412172 FABTECH Fuel Systems 1 (3 cr.)	Introduces the student to the various fuel systems and teaches the fundamentals needed by a technician to properly diagnose and repair complex fuel systems installed in various Caterpillar machines.
10442103 FABTECH Applied Welding (2 cr.)	Acquaints students with the common welding techniques and procedures for arc and oxyacetylene welding in all positions. Topics include fusion welding, brazing, cutting, metal identification, selection of electrodes and American Welding Society symbols.
10609170 Ladder Logic and Control Devices (1 cr.)	Introduces ladder logic diagrams used to document power control networks. Discrete industrial devices are also studied including switches, contactors, relays, timers, and motor starters. Students will design, construct, and troubleshoot ladder logic circuitry following safe working procedures. Memory addressing schemes and PLC hardware of an Allen-Bradley SLC-500 is introduced. Students taking this course should have a working knowledge of DC and AC circuits.
10660114 AC Circuits 1 (1 cr.)	Covers AC waveforms and different voltage values including Peak, RMS, Average and Peak to Peak. The operation of transformers is also included. Laboratory activities using the oscilloscope are performed to verify the theory.

Course Descriptions

10804113 College Technical Math 1A (3 cr.) Topics include: solving linear equations; graphing; percent; proportions; measurement systems; computational geometry; and right triangle trigonometry. Emphasis will be on the application of skills to technical problems. Successful completion of College Technical Mathematics 1A and College Technical Mathematics 1B is the equivalent of College Technical Mathematics 1.

31801318F FABTECH Applied Communication (2 cr.) Focuses on technical vocabulary, business writing, job search strategies, interpersonal communication and oral presentation skills through individual and group activities. Open enrollment for all students. It is recommended, but not required, that the student have basic computer skills, HS GPA 2.75+ OR ACPL Read 54+/Sent 83+, Next Gen Read 250+/Sent 237+, ACT Read 18+/Engl 15+ OR Read Prep 10838105/Sent Prep 74851745 OR not pursuing a degree. Personal/professional development students who have not taken the ACCUPLACER test need to consult with their instructor during the first class..

412 - Combustion Diesel Technology Assistant

10412102 Introduction to Diesel Technology (4 cr.) Introduces the diesel shop environment, and emphasizes shop safety and general shop practices. Introduces over the road commercial motor vehicle preventative maintenance, and prepares students for success in the core diesel program classes.

413 - Electrician Apprentice (ABC)

50413781 Intro Electrical Theory/DC Safety (2 cr.) Introduces the apprentice to the trade, electrical codes and safety. In addition, DC theory is applied to electrical circuits, devices, and components. DC circuit calculations help develop trade math skills. This course aligns with the first half of the NCCER level 1 curriculum for construction electricians.

50413782 Wiring, Blueprint Reading, Intro NEC (2 cr.) Explores electrical codes, safety and AC theory. In addition, basic wiring principles and print reading are introduced to help build trade skills for ABC electrician apprentices. Use of test equipment used by the trade is included. This course aligns with the second half of the NCCER level 1 curriculum for construction electricians.

50413783 Electric, Motor, Conduit, Light (2 cr.) Reviews AC electrical theory, circuits and devices. Apprentices will also examine basic lighting systems, and develop skills bending and fabricating conduit. Course includes an introduction to motors and motor installations. Electrical safety work practices and codes are reinforced. The NCCER AC module in Level 2 will be used as review. This course aligns with the first half of the NCCER level 2 curriculum for construction electricians.

Course Descriptions

50413784 Ground, Overcurrent, Terminate (2 cr.)

Examines conductor terminations and splices, methods and practices for installing electrical devices, and applying NEC requirements to various installations. Apprentices will also be introduced to grounding and bonding, overcurrent protective devices, and cable trays. Electrical safety work practices and applicable electrical codes will be reinforced. This course aligns with the second half of the NCCER level 2 curriculum for construction electricians. In addition, an introduction to photovoltaic, wind, water, geothermal and other renewable energy applications will be explored.

50413785 Intermediate Wiring Applications (2 cr.)

Addresses load calculations, conductor selection and sizing, lighting systems, intermediate wiring applications, and the NEC requirements and installation procedures for various types of electrical equipment. Electrical safety work practices and codes will be reinforced in this course. Equipment requirements for hazardous locations are discussed. This course aligns with the first half of the NCCER level 3 curriculum for construction electricians.

50413786 Motor Appl Controls, Installs (2 cr.)

Examines selecting and wiring transformers, applying NEC requirements and installation requirements for commercial electrical services, and motor controls. Apprentices will also explore low voltage systems and components. Electrical safety work practices and codes are reinforced in this course. This course aligns with the second half of the NCCER level 3 curriculum for construction electricians.

50413787 Emergency & Security Systems (2 cr.)

Examines back-up power equipment, special communication systems, wiring devices, and installation requirements for emergency and security systems. Apprentices will explore electric generators and energy storage, fire alarms, DACS systems and related equipment. Electrical safety work practices and codes are reinforced in this course. This course aligns with the first half of the NCCER level 4 curriculum for construction electricians.

50413788 Systems Controls (2 cr.)

Examines advanced controls, including solid states, PLC hardware, starters, variable frequency drives and electrical equipment associated with system control. NEC requirements for HVAC, heat tracing, medium voltage equipment, and special occupancies are included. Apprentices will also have related motor operations to maintenance and replacement job tasks. This course aligns with the second half of the NCCER level 4 curriculum for construction electricians.

413 - Electricity

31413301 Residential 1 (3 cr.)

Introduces students to residential wiring methods that includes practical application and hands-on experience in implementing safety, tool usage, and NEC code requirements.

Course Descriptions

31413302 Residential 2 (3 cr.)	Learn basic electrical wiring concepts, DC electrical theory, Ohm's law and types of services for residential applications. Students will build on their skills of print reading and NEC code knowledge while completing their hands-on assessments installing GFCI, AFCI, and other wiring devices.
31413303 Residential 3 (3 cr.)	Expand knowledge of basic electrical wiring concepts, electrical theory, and DC circuits while also be introduced to residential lighting installations, splicing techniques that include single pole switching, duplex receptacle wiring, 3-way switching, 4-way switching, and troubleshooting. Students will continue to develop their skills while completing their hands-on assessments.
31413304 Residential 4 (3 cr.)	Allows students to demonstrate knowledge of residential wiring by applying skills learned in previous courses to complete a large-scale housing project. They will test their knowledge of the NEC, while developing new techniques along with troubleshooting to complete this project.
31413305 Commercial 1 (3 cr.)	Introduces students to Commercial wiring methods that include practical application and hands-on experience. Skills that students will develop are interpretation of commercial plans, branch circuit requirements, along with conduit bending techniques while applying NEC code requirements.
31413306 Commercial 2 (3 cr.)	Learn basic electrical wiring concepts while studying motor control fundamentals, as well as the basic AC theory and motor controls. Students will build on their skills of conduit installations, fittings and support hardware, MC cable, low voltage switching, and NEC code knowledge while completing their hands-on assessments
31413307 Commercial 3 (3 cr.)	Expands knowledge of commercial wiring concepts, AC electrical theory, control components, pilot devices, and control circuit diagrams. Introduction to commercial lighting installations, wiring devices, and troubleshooting will also occur. Students will continue to develop their skills while completing their hands-on assessments.
31413308 Commercial 4 (3 cr.)	Allows students to demonstrate knowledge of commercial wiring by applying the skills they have learned in previous courses to complete a large-scale project. They will test their knowledge of the NEC, while developing new techniques along with troubleshooting to complete this project.
31413309 Industrial 1 (3 cr.)	Introduces students to Industrial wiring methods along with the introduction to the principles Photovoltaics. Students will develop skills used to install generators, fire alarm systems and control circuit. Along with conduit bending and threading techniques, students will apply the proper NEC code requirements.

Course Descriptions

31413310 Industrial 2 (3 cr.) Expands upon industrial wiring concepts while studying schematics and motor control circuits. Students will build on their skills of conduit installations and NEC code knowledge while completing their hands-on assessments.

31413318 Industrial 3 (3 cr.) Allows students to demonstrate knowledge of industrial wiring by applying the skills they have learned in previous courses to complete the required projects. They will test their knowledge of the NEC, while developing skills to complete the troubleshooting assessments.

413 - Electricity (Sole Source)

30413301 Electricity - Residential 1 (2 cr.) Introduces the students to Electrical Safety, Ohm's Law, the National and State Electrical Code, how to calculate voltage drop, use and install various electrical devices such as wall outlet boxes, switches, and the proper way to install a GFCI. The students will also learn how to calculate general lighting loads, determine how many wires are allowed in a box and how to bond wiring devices to the outlet box.

30413302 Electricity - Residential 2 (2 cr.) Is a step-by-step approach to series and parallel circuits, electrical measurements with a voltmeter and ammeter, and goes into more depth in covering split circuit receptacles, multi-wire circuits, three wire branch circuits, and the installation of multi-outlet assemblies. Overhead services, service drop and underground service is also covered in this course.

30413303 Electricity - Commercial 1 (2 cr.) Covers the introduction of magnetism, polarity, Lenz's law and the difference between direct and alternating current. Electrical symbols that are used on construction drawing are covered, along with minimum lighting requirement, receptacle and equipment loads for a given area. The student also learns the operation of fuses and circuit breakers.

30413304 Electricity - Commercial 2 (2 cr.) Introduces inductance and inductive reactance, along with the relationship of voltage and current. The student will also learn how to install raceways, multi-outlet assemblies, floor outlets, how to control a sump pump and determine the correct over current protection for a panel board. The student will also be introduced to single phase motors and also apply electrical symbols and line diagrams.

30413305 Electricity - Industrial 1 (2 cr.) Is a step-by-step approach to the operation of AC/DC magnetic contactors and motor starters, the operation of time delays and logic, along with control devices. The students will also learn the benefits of using busways, how to install busways, the installation of motors, transformers, and three phase motors.

30413306 Electricity - Industrial 2 (2 cr.) Introduces the students to programmable controllers, types of panel boards, the electrical needs for air conditioning, and the requirements for protection of a building. Lighting safety rules will be covered along with direct current motors and the installation of direct current motors.

Course Descriptions

30413307 Electricity - Code 1 (2 cr.) Covers the steps for NEC proposals and how to identify NEC editorial symbols. Time will be spent on how to calculate proper raceway and box sizes, how to determine raceway and box locations, equipment clearances, and transformer installation requirements as it pertains to the NEC. The students will also understand the code requirements for hazardous locations along with pool and hot tub wiring.

30413308 Electricity - Code 2 (2 cr.) Gives the understanding of grounding and how bonded parts can protect against electric shock. The students will learn what a bonding jumper is, what an isolated system looks like, why enclosures and other equipment are grounded, and how a ground fault protection device works.

413 - Industrial Electrician Apprenticeship

50413521 Maintenance Electrician Related 1 (2 cr.) Introduces the learner to the Apprenticeship Program. Specific topics include basic electrical concepts, devices and circuits associated with direct current (DC) principles, electrical safety, circuit analysis, magnetism, meter use, and National Electrical Code.

50413522 Maintenance Electrician Related 2 (2 cr.) Provides the apprentice with the basic fundamentals of motor control. The apprentice acquires skills in recognizing and drawing the basic symbols, the language of motor control, and how to apply these symbols into industrial applications. In addition, the apprentice draws and reads ladder and wiring diagrams, and applies this knowledge by wiring selected diagrams in a lab format.

50413523 Maintenance Electrician Related 3 (2 cr.) Focuses on the basic concepts of alternating (AC). Students will learn AC circuit analysis, oscilloscope use, single phase and three phase power principles. National Electrical Code requirements for conductor use are also discussed.

50413524 Maintenance Electrician Related 4 (2 cr.) Provides the apprentice with the advanced applications of motor control. The apprentice acquires skills in advanced logic of motor control, applying this logic to correctly interpret, design and wire control circuits. Apprentices wire pneumatic and solid state timing circuits for control of two motors, and forward/reversing circuits in an industrial lab environment.

50413525 Maintenance Electrician Related 5 (2 cr.) Provides the learner with a more in-depth study of the National Electrical Code requirements pertaining to general electrical installations, grounding, branch circuits, feeders, and motor circuits. AC motor theory, operation and connections are also included.

50413526 Maintenance Electrician Related 6 (2 cr.) Provides the apprentice with basic concepts and knowledge in Programmable Logic Controllers. The apprentice acquires knowledge of basic hardware and software of Programmable Logic Controllers and skills in programming technique of various Allen Bradley software packages as used in industry.

Course Descriptions

50413527 Maintenance Electrician Related 7 (2 cr.)	Prepares the learner to apply solid state fundamentals including diodes, rectifiers, power supplies, transistors and SCR's. Students will also learn transformer theory, connections, and National Electrical Code installation requirements.
50413528 Maintenance Electrician Related 8 (2 cr.)	Provides the apprentice with basic concepts and knowledge in DC Variable Speed Drives. The apprentice acquires the skills and knowledge to install, program, maintain, and troubleshoot an analog and digital DC Drive system. The apprentice applies knowledge of communication, peripherals, and feedback devices to operate these drives in a lab environment.
50413529 Maintenance Electrician Related 9 (2 cr.)	Provides the apprentice with advanced concepts and knowledge in programmable logic controllers and photoelectric sensing devices. The apprentice acquires skills in advanced programming, troubleshooting, and maintaining programmable logic controllers and photoelectric sensing applications as used in industry.
50413530 Maintenance Electrician Related 10 (2 cr.)	Provides the learner with the basic concepts of AC Variable Speed Drives. The student will acquire the skills to install, program, maintain and troubleshoot a drive system.
50413766 Fluid Power Systems for Industrial Electricians - Pneumatics (0 cr.)	Relates the basics of pneumatic theory and pneumatic components. Reviews safety and the interrelationship between pneumatic power with electrical control are emphasized.
50413767 Fluid Power Systems for Ind Elec Hydraulics (0 cr.)	Relates the basics of hydraulic theory and hydraulic components. Reviews safety and the interrelationship between hydraulic power with electrical control are emphasized.
414 - Electronics Electrical & Instrumentation Apprentice	
50413521 Maintenance Electrician Related 1 (2 cr.)	Introduces the learner to the Apprenticeship Program. Specific topics include basic electrical concepts, devices and circuits associated with direct current (DC) principles, electrical safety, circuit analysis, magnetism, meter use, and National Electrical Code.
50413522 Maintenance Electrician Related 2 (2 cr.)	Provides the apprentice with the basic fundamentals of motor control. The apprentice acquires skills in recognizing and drawing the basic symbols, the language of motor control, and how to apply these symbols into industrial applications. In addition, the apprentice draws and reads ladder and wiring diagrams, and applies this knowledge by wiring selected diagrams in a lab format.
50413523 Maintenance Electrician Related 3 (2 cr.)	Focuses on the basic concepts of alternating (AC). Students will learn AC circuit analysis, oscilloscope use, single phase and three phase power principles. National Electrical Code requirements for conductor use are also discussed.

Course Descriptions

50413524 Maintenance Electrician Related 4 (2 cr.)	Provides the apprentice with the advanced applications of motor control. The apprentice acquires skills in advanced logic of motor control, applying this logic to correctly interpret, design and wire control circuits. Apprentices wire pneumatic and solid state timing circuits for control of two motors, and forward/reversing circuits in an industrial lab environment.
50413525 Maintenance Electrician Related 5 (2 cr.)	Provides the learner with a more in-depth study of the National Electrical Code requirements pertaining to general electrical installations, grounding, branch circuits, feeders, and motor circuits. AC motor theory, operation and connections are also included.
50413526 Maintenance Electrician Related 6 (2 cr.)	Provides the apprentice with basic concepts and knowledge in Programmable Logic Controllers. The apprentice acquires knowledge of basic hardware and software of Programmable Logic Controllers and skills in programming technique of various Allen Bradley software packages as used in industry.
50413527 Maintenance Electrician Related 7 (2 cr.)	Prepares the learner to apply solid state fundamentals including diodes, rectifiers, power supplies, transistors and SCR's. Students will also learn transformer theory, connections, and National Electrical Code installation requirements.
50413528 Maintenance Electrician Related 8 (2 cr.)	Provides the apprentice with basic concepts and knowledge in DC Variable Speed Drives. The apprentice acquires the skills and knowledge to install, program, maintain, and troubleshoot an analog and digital DC Drive system. The apprentice applies knowledge of communication, peripherals, and feedback devices to operate these drives in a lab environment.
50413529 Maintenance Electrician Related 9 (2 cr.)	Provides the apprentice with advanced concepts and knowledge in programmable logic controllers and photoelectric sensing devices. The apprentice acquires skills in advanced programming, troubleshooting, and maintaining programmable logic controllers and photoelectric sensing applications as used in industry.
50413530 Maintenance Electrician Related 10 (2 cr.)	Provides the learner with the basic concepts of AC Variable Speed Drives. The student will acquire the skills to install, program, maintain and troubleshoot a drive system.
50413766 Fluid Power Systems for Industrial Electricians - Pneumatics (0 cr.)	Relates the basics of pneumatic theory and pneumatic components. Reviews safety and the interrelationship between pneumatic power with electrical control are emphasized.
50413767 Fluid Power Systems for Ind Elec Hydraulics (0 cr.)	Relates the basics of hydraulic theory and hydraulic components. Reviews safety and the interrelationship between hydraulic power with electrical control are emphasized.

Course Descriptions

50414722 Troubleshooting Electronic Systems & Devices (1 cr.)

Examines troubleshooting and repair of electronic systems & devices involved with electrical and instrumentation. Course learning outcomes include applying safety procedures when testing and troubleshooting electronic systems, analyzing the role and function of semiconductor components, testing semiconductor components, troubleshooting semiconductor applications, performing circuit repair, and applying predictive and preventative maintenance concepts to electronic systems and devices.

50414725 Introduction to Industrial Automated Systems (1 cr.)

Introduces E&I apprentices to industrial automated equipment and systems. Learning outcomes will examine basic control loops, compare automated and robotic manufacturing systems, explore distributed and central control, examine various system layouts, apply controller concepts and communications, and discuss automated control system safety. Signaling systems and redundant systems are explored as well.

50414726 Instrumentation Basics for Process Control (2 cr.)

Explores instrumentation basics involved in process control and relates these to job duties and tasks performed by E&I technicians. Course learning outcomes include safety, instrumentation basics, measurement, control, instrument calibration, control theories, using technical resources, and networking protocols.

50414727 Intro to Measurement and Process for E&I (2 cr.)

Teaches apprentices to describe and explain the make-up of an automatic control loop, the function of each of the control loop elements and the terms used to describe the loop performance and characteristics and perform mathematical functions associated with offset math and apply the concepts to common signaling systems use used in process control systems. Course will examine the principles, methods and devices used to measure flows, temperatures, pressures, levels, and densities in various industrial process applications. Course will explore common methods and types of equipment used to measure chemical components of a material or stream.

50414728 Applied Process Control for E&I (2 cr.)

Explores the makeup of automatic control loops, and the role and function of control loop elements. Concepts related to common signaling systems used in process control systems will be examined. Course compares various methods of transmitting sensor signals and examines the principles associated with various types of control valves and accessories. Theories of distributed control systems and design considerations are included. A capstone project will be completed during this course to demonstrate mastery of skills learned throughout the entire apprenticeship.

420 - Machine Advanced Manual Machining

Course Descriptions

- 31804307 Math for the Trades (2 cr.)** Focuses on the math skills needed for various trades. Topics include arithmetic fundamentals, percent and proportion applications, the metric system, conversions, practical geometry, measurement applications, signed numbers and formula evaluation. Micrometer, equation solving and standard rule measurement units are included as needed. Scientific calculator use is introduced as needed.
- 32420335 Manual Milling Machines 1 (3 cr.)** Introduces aspiring machinists or maintenance mechanics to the basic operations and safety practices associated with the manual milling machine. Prepares students for entry-level machine operator or maintenance machinist positions in an industrial plant.
- 32420336 Manual Milling Machines 2 (3 cr.)** Continues to introduce aspiring machinists or maintenance mechanics to the basic operations and safety practices associated with the manual milling machine. Prepares students for entry-level machine operator or maintenance machinist positions in an industrial plant.
- 32420337 Manual Machine Tools, Adv. 1 (3 cr.)** Introduces aspiring machinist or maintenance mechanics to advanced manual machining practices. Prepares students for entry-level machine operator or maintenance machinist positions in an industrial plant.
- 32420338 Manual Machine Tools, Adv. 2 (3 cr.)** Continues to introduce aspiring machinists or maintenance mechanics to advanced manual machining practices. Prepares students for entry-level machine operator or maintenance machinist positions in an industrial plant.
- 420 - Machine Basic Machine Tool**
- 32420331 Measurement & Benchwork 1 (3 cr.)** Builds a foundation for subsequent training in machining, industrial maintenance or other industrial areas requiring correct and accurate use of hand tools and precision measuring instruments in a safe manner. Prepares students for entry-level machine operator or maintenance machinist position in an industrial plant.
- 32420332 Measurement & Benchwork 2 (3 cr.)** Continues to build a foundation for subsequent training in machining, industrial maintenance or other industrial areas requiring correct and accurate use of hand tools and precision measuring instruments in a safe manner. Prepares students for entry-level machine operator or maintenance machinist positions in an industrial plant.
- 32420333 Engine Lathe 1 (3 cr.)** Introduces aspiring machinists or maintenance mechanics to the basic operations and safety practices associated with the engine lathe. Prepares students for entry-level machine operator or maintenance machinist positions in an industrial plant.

Course Descriptions

32420334 Engine Lathe 2 (3 cr.) Continues to introduce aspiring machinists or maintenance mechanics to the basic operations and safety practices associated with the engine lathe. Prepares students for entry-level machine operator or maintenance machinist positions in an industrial plant.

32420350 Blueprint Reading, Basic-MTO (1 cr.) Focuses on the interpretation of machine drawings. Students study isometric and orthographic views on drawing and develop simple working drawings. Topics include dimensions, internal and external threads, holes, bores, fillets, radii, surfaces, planes, metric and geometric dimensioning and tolerancing.

32420353 Blueprint Reading, Adv-MTO (1 cr.) Covers advanced print reading including geometric dimensioning & tolerancing, welding, and assembly prints.

420 - Machine Computer Numerical Control Skills

32420341 CNC M/G Code 1 (3 cr.) Upgrades the skills of established machinists. Prepares students to become a higher level machine operator or machinist in an industrial plant.

32420342 CNC M/G Code 2 (3 cr.) Continues to upgrade the skills of established machinists. Prepares students to become a higher level machine operator or machinist in an industrial plant.

32420343 CNC, Advanced 1 (3 cr.) Upgrades the skills of established machinists. Prepares students to become a higher level machine operator or machinist in an industrial plant.

32420344 CNC, Advanced 2 (3 cr.) Continues to upgrade the skills of established machinists. Prepares students to become a higher level machine operator or machinist in an industrial plant.

32420352 CAD/CAM-Machine Tool (2 cr.) Includes the fundamentals of drafting through the use of sketches on grid paper. In addition, the student will also be introduced to commands and CAD/CAM techniques using Mastercam. Mastercam is a CAD/CAM system that is used in industry.

420 - Machine Industrial Machining

32420301 Manual Machining Basics (3 cr.) Designed for individuals already working in the machining field. Provides training in machining, industrial maintenance or other industrial areas requiring correct and accurate use of hand tools and precision measuring instruments in a safe manner. Introduces novice machinists or maintenance mechanics to the basic operations and safety practices associated with the manual milling machine and manual lathes.

32420350 Blueprint Reading, Basic-MTO (1 cr.) Focuses on the interpretation of machine drawings. Students study isometric and orthographic views on drawing and develop simple working drawings. Topics include dimensions, internal and external threads, holes, bores, fillets, radii, surfaces, planes, metric and geometric dimensioning and tolerancing.

Course Descriptions

50420510 Industrial Mfg Technician Apprentice 1 (2 cr.)

The first semester of related instruction includes an orientation to the trade and manufacturing, then followed by the MSSC safety module, MSSC quality module, OSHA 10 certification, blueprint reading, visual inspection, measurement and first aid & CPR training. Manufacturing concepts will be introduced and applied in a variety of manufacturing settings. MSSC modules 1 and 2 are aligned with the learning plans for this course along with the MATC course Machine Trades Math.

50420512 Industrial Mfg Technician Apprentice 2 (2 cr.)

The second semester of related instruction includes the MSSC manufacturing processes and production and maintenance awareness modules, along with communication, lean manufacturing, problem solving, and frontline leadership. Manufacturing related concepts will be applied to a variety of industrial setting. The course wraps-up with an examination of emerging trends and technologies, and future directions for manufacturing. MSSC learning objectives in modules 3 and 4 are aligned with the learning plans for this course. In addition, the MATC Communication for Apprentices course is included in the learning plans but will stand alone for registration and transcript purposes.

50420711 Mathematics for the Machine Trades (1 cr.)

Provides applied mathematics instruction from a review of basic arithmetic; basic algebra; applications, based on geometry; right triangle trigonometry, oblique angle trigonometry and compound angles.

50420712 Oral & Written Comm for Machine Tool (1 cr.)

Introduces the apprentice to basic communication concepts relating to the workplace. It is designed specifically for the apprentice to acquire the necessary skills of giving instructions, writing a technical memo, and explaining a technical process. Throughout the course the apprentice will brainstorm, write, edit, revise, and use one-on-one communication delivery in a small group. The course combines lecture and hands-on activities utilizing information which the apprentice brings from the workplace.

420 - Machine Machine Tool Technician

10442120 Related Welding (1 cr.)

Prepares students with the common techniques and procedures for SMAW, GMAW, GTAW, and FCAW welding in a repair or machine shop environment. Topics include welding metal, cutting metal with plasma and oxy-fuel, and metal identification. Laboratory activities will provide the student with hands-on practice.

Course Descriptions

31801318 Communication, Applied (2 cr.)	Focuses on technical vocabulary, business writing, job search strategies, interpersonal communication and oral presentation skills through individual and group activities. Open enrollment for all students. It is recommended, but not required, that the student have basic computer skills, HS GPA 2.75+ OR ACPL Read 54+/Sent 83+, Next Gen Read 250+/Sent 237+, ACT Read 18+/Engl 15+ OR Read Prep 10838105/Sent Prep 74851745 OR not pursuing a degree. Personal/professional development students who have not taken the ACCUPLACER test need to consult with their instructor during the first class.
31804307 Math for the Trades (2 cr.)	Focuses on the math skills needed for various trades. Topics include arithmetic fundamentals, percent and proportion applications, the metric system, conversions, practical geometry, measurement applications, signed numbers and formula evaluation. Micrometer, equation solving and standard rule measurement units are included as needed. Scientific calculator use is introduced as needed.
31809300 Human Relations (2 cr.)	Explores practical applications of issues in psychology and human behavior that affect a person's daily life. The objective is to enhance the student's quality of life by developing an awareness of the connection between his/her personal life and work life. This course is intended for technical diploma students.
32420314 Manufacturing Techniques, Cold (1 cr.)	Focuses on the manufacturing processes not necessarily done in a machine shop and covers techniques performed on materials in a cold state. Topics include cold-working metals, metal stamping and forming in presses, recent techniques in metalworking, and polishing and finishing of metal surfaces.
32420331 Measurement & Benchwork 1 (3 cr.)	Builds a foundation for subsequent training in machining, industrial maintenance or other industrial areas requiring correct and accurate use of hand tools and precision measuring instruments in a safe manner. Prepares students for entry-level machine operator or maintenance machinist position in an industrial plant.
32420332 Measurement & Benchwork 2 (3 cr.)	Continues to build a foundation for subsequent training in machining, industrial maintenance or other industrial areas requiring correct and accurate use of hand tools and precision measuring instruments in a safe manner. Prepares students for entry-level machine operator or maintenance machinist positions in an industrial plant.
32420333 Engine Lathe 1 (3 cr.)	Introduces aspiring machinists or maintenance mechanics to the basic operations and safety practices associated with the engine lathe. Prepares students for entry-level machine operator or maintenance machinist positions in an industrial plant.

Course Descriptions

32420334 Engine Lathe 2 (3 cr.)	Continues to introduce aspiring machinists or maintenance mechanics to the basic operations and safety practices associated with the engine lathe. Prepares students for entry-level machine operator or maintenance machinist positions in an industrial plant.
32420335 Manual Milling Machines 1 (3 cr.)	Introduces aspiring machinists or maintenance mechanics to the basic operations and safety practices associated with the manual milling machine. Prepares students for entry-level machine operator or maintenance machinist positions in an industrial plant.
32420336 Manual Milling Machines 2 (3 cr.)	Continues to introduce aspiring machinists or maintenance mechanics to the basic operations and safety practices associated with the manual milling machine. Prepares students for entry-level machine operator or maintenance machinist positions in an industrial plant.
32420337 Manual Machine Tools, Adv. 1 (3 cr.)	Introduces aspiring machinist or maintenance mechanics to advanced manual machining practices. Prepares students for entry-level machine operator or maintenance machinist positions in an industrial plant.
32420338 Manual Machine Tools, Adv. 2 (3 cr.)	Continues to introduce aspiring machinists or maintenance mechanics to advanced manual machining practices. Prepares students for entry-level machine operator or maintenance machinist positions in an industrial plant.
32420339 Grinding Processes 1 (3 cr.)	Introduces aspiring machinists or maintenance mechanics to precision grinding machines. Prepares students for entry-level machine operator or maintenance machinist positions in an industrial plant.
32420341 CNC M/G Code 1 (3 cr.)	Upgrades the skills of established machinists. Prepares students to become a higher level machine operator or machinist in an industrial plant.
32420342 CNC M/G Code 2 (3 cr.)	Continues to upgrade the skills of established machinists. Prepares students to become a higher level machine operator or machinist in an industrial plant.
32420343 CNC, Advanced 1 (3 cr.)	Upgrades the skills of established machinists. Prepares students to become a higher level machine operator or machinist in an industrial plant.
32420344 CNC, Advanced 2 (3 cr.)	Continues to upgrade the skills of established machinists. Prepares students to become a higher level machine operator or machinist in an industrial plant.
32420345 CAM Programming & Toolmaking 1 (3 cr.)	Covers the basics of MasterCAM Mill and Lathe with the emphasis on producing Tool path. Tool making design and economics is also emphasized in this course.
32420346 CAM Programming & Toolmaking 2 (3 cr.)	Continues to cover the basics of MasterCAM Mill and Lathe with the emphasis on producing Tool path. Tool making design and economics is also emphasized in this course.

Course Descriptions

32420350 Blueprint Reading, Basic-MTO (1 cr.)	Focuses on the interpretation of machine drawings. Students study isometric and orthographic views on drawing and develop simple working drawings. Topics include dimensions, internal and external threads, holes, bores, fillets, radii, surfaces, planes, metric and geometric dimensioning and tolerancing.
32420351 Metallurgy, MTO (1 cr.)	Introduces the science of metals and alloys. The crystalline structure and microstructure of metals and their effect on the properties of metals are studied. Prime consideration is given to heat treatment operations dealing with ferrous metals.
32420352 CAD/CAM-Machine Tool (2 cr.)	Includes the fundamentals of drafting through the use of sketches on grid paper. In addition, the student will also be introduced to commands and CAD/CAM techniques using Mastercam. Mastercam is a CAD/CAM system that is used in industry.
32420353 Blueprint Reading, Adv-MTO (1 cr.)	Covers advanced print reading including geometric dimensioning & tolerancing, welding, and assembly prints.
32420354 Introduction to Numerical Control - MTO (3 cr.)	Upgrades the skills of established machinists. Prepares students to become a higher level machine operator or machinist in an industrial plant.

420 - Machine Machinist Apprentice

50419506 Hydraulics - Mach Apprentice	Hydraulics - Mach Apprentice
50420503 Machinery Handbook 1-Tables/Charts/Formulas (0 cr.)	Teaches students how to use the Machinery's Handbook to solve problems found in the machine shop environment. Topics include class of fits, fasteners, feeds and speeds, etc.
50420514 Metal Heat Treat-Properties-Methods-Testing (0 cr.)	Teaches students properties of different types of metals, heat-treatment of various materials, and testing processes of hardened materials.
50420516 Metrology/SPC (0 cr.)	Covers the use of measurement tools, calipers and micrometers, bore gauges, etc. Basic statistical process control to include charting, bell curves and process capability studies are also studied.
50420523 Jigs and Fixtures (0 cr.)	Teaches students to understand the use of jigs and fixtures in the modern machine shop, as well as the cost of fixturing to the manufacturer.
50420531 Machine Techniques 1, Lathes/Drilling (0 cr.)	Provides students with a basic understanding of the metal working lathes and drill press's components, basic safety and operation, and speeds and feeds calculations.
50420532 Machine Techniques 2, Power Saws/Milling (0 cr.)	Provides students with a basic understanding of power saws and milling machines, types of cutting tools and cutting tool selection. Basic safety and operation, speeds and feeds calculations will be covered.
50420533 Machine Techniques 3, Boring Mills/Planers (0 cr.)	Provides students with a basic understanding of surface and cylindrical grinders and wheel selection.
50420534 Cost Estimating (0 cr.)	Teaches students to estimate the cost of machined parts to the manufacturer, job types, employability, management styles, and job routing.

Course Descriptions

50420537 Carbide Machining/GD&T (0 cr.)	Incorporates an 8-hour Kennametal carbide machining seminar, covering insert selection, use of speeds and feeds, calculators, tool geometry and insert coatings. The course also includes 10 hours of instruction in geometric dimensioning and tolerance application of G.D.T. symbols on machine blueprints, to include tolerance of form, profile, location, orientation and runout.
50420538 Intro to Numerical Control (1 cr.)	Covers programming machine tools using EIA/ISO and G and M codes. Use of cutter compensation and canned machining cycles is also addressed.
50420539 CNC Programming (1 cr.)	Covers CNC conversational programming that will be done in assorted programming languages.
50420540 CAD/CAM-36 Hr (1 cr.)	Is an introduction to the basic concept of computer aided drafting and computer aided manufacturing.
50420571 Machinist Math 1, Fractions and Decimals (0 cr.)	Teaches students the use of fractions and decimals in the machine shop environment.
50420572 Machinist Math 2, Basic Algebra (0 cr.)	Teaches students to solve algebraic equations commonly used in the machining trade.
50420573 Machinist Math 3, Basic Geometry (0 cr.)	Teaches students to understand and apply basic geometry concepts and problems found in the machine tool trade.
50420574 Machinist Math 4, Right-Hand Trigonometry (0 cr.)	Teaches students to solve trig equations commonly used in the machine tool trade.
50421514 Blueprint Reading 1 - Machine Apprentice (0 cr.)	Covers basic blueprint reading, third-angle orthographic projection, sectional views.
50421516 Blueprint Reading 2 - Machine Apprentice (0 cr.)	Covers advanced blueprint reading, to include assembly prints, welding and gear prints.
50442502 Welding-Machinist Apprentice (0 cr.)	Introduces the student to the Gas Metal Arc Welding and the Gas Tungsten Arc Welding processes. Safety, power source setup and material selection are covered.
50809500 Job Relations - Apprentice (0 cr.)	Prepares students to deal effectively with people at all levels in the workplace by applying various human relations principles.

420 - Machine Machinist Helper

32420331 Measurement & Benchwork 1 (3 cr.)	Builds a foundation for subsequent training in machining, industrial maintenance or other industrial areas requiring correct and accurate use of hand tools and precision measuring instruments in a safe manner. Prepares students for entry-level machine operator or maintenance machinist position in an industrial plant.
32420333 Engine Lathe 1 (3 cr.)	Introduces aspiring machinists or maintenance mechanics to the basic operations and safety practices associated with the engine lathe. Prepares students for entry-level machine operator or maintenance machinist positions in an industrial plant.

Course Descriptions

32420350 Blueprint Reading, Basic-MTO (1 cr.) Focuses on the interpretation of machine drawings. Students study isometric and orthographic views on drawing and develop simple working drawings. Topics include dimensions, internal and external threads, holes, bores, fillets, radii, surfaces, planes, metric and geometric dimensioning and tolerancing.

420 - Machine Manufacturing Technician

31420301 Manufacturing Technician 1 (3 cr.) Provides an orientation to manufacturing, followed by the MSSC safety module, MSSC quality model, OSHA 10 certification, blueprint reading, visual inspection, measurement and first aid & CPR training. MSSC modules 1 & 2 are aligned with the learning plans for this course.

31420302 Manufacturing Technician 2 (3 cr.) Introduces the MSSC manufacturing processes and production and maintenance awareness modules, along with communication, lean manufacturing, problem solving, and frontline leadership. MSSC modules 3 and 4 are aligned with the learning plans for this course.

31420303 Math for Manufacturing (1 cr.) Provides applied mathematics instruction from a review of basic arithmetic and algebra.

31420304 Communication for Manufacturing (1 cr.) Introduces the basic communication concepts relating to the workplace to acquire the necessary skills of giving instructions, writing a technical memo, and explaining a technical process.

423 - Lubrication Technician

47455456 Transition to Trainer-8 Hr (0 cr.) Introduces students to the tools of a job site trainer. Students will explore the role of a journeyworker/trainer, discover how to deliver hands-on training and examine the process for giving useful feedback.

50423717 Hydraulics for MMMP Trades (0 cr.) Analyzes inspecting, servicing, and troubleshooting hydraulic systems and components. Apprentices will learn safety related issues and be taught proper safety procedures for working with hydraulic systems and components.

50423718 Pneumatics & Compressed Air for MMMP Trades (0 cr.) Provides instruction to apprentices concerning many aspects of inspecting, servicing, and troubleshooting pneumatic systems and components. Apprentices will learn safety related issues and be taught proper safety procedures for working with pneumatic systems and components.

50423720 Pipefitting and Valves for MMMP Trades (0 cr.) Introduces apprentices to pipe sizes, materials and schedules, examines fittings, tubing and valves, and develops skills related to layout, installation, and maintenance.

50423722 Packings, Seals, Gaskets for MMMP Trades (0 cr.) Examines packing, seals, and gaskets and compares materials and applications. Then skills in layout, cutting, inspecting, removing, and installing these components will be developed. This course was the former C-13 module for the MMMP apprenticeship program.

Course Descriptions

50423730 Bearings for the MMMP Trades (0 cr.)	Examines bearing types and applications, and compares equipment bearings. Then learners will develop skills related to bearing inspection, selection, removal, mounting, lubrication and diagnosing bearing failures.
50423731 Couplings & Alignment for the MMMP Trades (1 cr.)	Compares different coupling types and examines common misalignment problems. Apprentices will develop skills related to inspecting, troubleshooting, and preparing couplings for removal and installation, and also aligning and lubricating couplings.
50423732 Pumps for the MMMP Trades (0 cr.)	Compares different pump types and their applications. Apprentices will complete a field inspection of pumps and learn how to troubleshoot, remove, overhaul, install and perform preventative maintenance on pumps.
50423733 Belts, Sheaves, Pulleys, and Drives (0 cr.)	Compares different belt types and drive components. Apprentices will develop skills related to inspecting, troubleshooting, removing, selecting, and installing belt drive systems.
50423734 Gears, Gearboxes, Gear Assemblies (0 cr.)	Compares gear types and applications. Apprentices will develop skills inspecting gear assemblies, troubleshooting gear problems, removing gears and components, and reassembling gear drive systems.
50423735 Mechanical Power Transmission (0 cr.)	Examines drive transmission systems and their applications, including roller chains. Apprentices will develop skills inspecting power transmission systems and troubleshooting mechanical drive systems.
50423736 Conveyors for the MMMP Trades (0 cr.)	Examines chain, belt, and other types of conveyors and related components.
50423760 Lubrication Fundamentals for Apprentices (2 cr.)	Includes interpreting oil test analyses, examining automated lubrication technologies, exploring ultrasound testing, comparing filtration technologies and exploring other fundamental concepts involved in lubrication technologies. Course is intended for apprentices enrolled in related instruction, and the fundamental concepts presented in this course will be applied to industrial equipment and machines and trade work practices.
423 - Maintenance Mechanic/Millwright Apprentice	
50419510 Hydraulic and Pneumatic Theory (0 cr.)	Is an introduction to the theories involved in fluid power transmission, including the relationships of flow and volume to speed of operation, and pressure and area to force. Emphasis is on the importance of reading and understanding fluid power symbols.
50419511 Hydraulic and Pneumatic Circuits (0 cr.)	Provides students the opportunity to build and test some of the common circuits used in industry using knowledge of symbology and fluid power theory learned in previous courses. An explanation of these circuit components is included in this course.

Course Descriptions

50419512 Pneumatics Apprentice (0 cr.)	Uses a combination of lecture and hands-on lab to explain some of the more common industrial uses for pneumatic systems. Correct air preparation and distribution as well as conservation of energy are stressed.
50420501 Machining Related 1 - Millwright (1 cr.)	The student will get hands-on experience working with basic measuring tools and also hands-on operations in layout tools and procedures. Screw thread tools and terminology will also be covered, as well as calculating the proper speeds and feeds to utilize on machine tools. Safety will be covered for every aspect of the industrial setting which the student will be working in.
50420502 Machining Related 2 - Millwright (1 cr.)	Gain an understanding of and practical experience on drill presses, lathes, milling machines and basic surface grinding. Completion of Machining Related 1 is recommended.
50423503 Millwright Related 1 (1 cr.)	This course provides the millwright apprentice proficiency in mathematics, science, computers, and blueprint reading required for the development of skilled journeyworkers.
50423504 Millwright Related 2 (1 cr.)	This course is a continuation of Millwright Related 1. Topics include math, science, and blueprint reading.
50423510 Millwright Related 7 (1 cr.)	This course provides the millwright apprentice technical instruction on subjects that are pertinent to the development of skilled journeyworkers. This related information explains the why of the trade and addresses the theory of operation, installation, repair and maintenance of mechanical components and machines used in industrial and manufacturing operations.
50423513 Millwright Related 3 - 36 HR (1 cr.)	This course provides the millwright apprentice with technical instruction on subjects that are pertinent to the development of skilled journeyworkers. This related information explains the why of the trade, and addresses the theory of operation, installation, repair and maintenance of mechanical components and machines used in industrial and manufacturing operations.
50423514 Millwright Related 4 - 36 HR (1 cr.)	This course provides the millwright apprentice with technical instruction on subjects that are pertinent to the development of skilled journeyworkers. This related information explains the why of the trade, and addresses the theory of operation, installation, repair and maintenance of mechanical components and machines used in industrial and manufacturing operations.
50423515 Millwright Related 5 - 36 HR (1 cr.)	This course provides the millwright apprentice with technical instruction on subjects that are pertinent to the development of skilled journeyworkers. This related information explains the why of the trade, and addresses the theory of operation, installation, repair and maintenance of mechanical components and machines used in industrial and manufacturing operations.

Course Descriptions

50423516 Millwright Related 6 - 36 HR (1 cr.) This course provides the millwright apprentice with technical instruction on subjects that are pertinent to the development of skilled journeyworkers. This related information explains the why fo the trade, and addresses the theory of operation, installation, repair and maintenance of mechanical components and machines used in industrial and manufacturing operations.

50423518 Millwright Related 8 - 72 HR (2 cr.) This course provides the millwright apprentice with technical instruction on subjects that are pertinent to the development of skilled journeyworkers. This related information explains the why of the trade, and addresses the theory of operation, installation, repair and maintenance of mechanical components and machines used in industrial and manufacturing operations.

50442507 Welding Processes for Apprenticeships 1 (1 cr.) Focuses on the basic concepts of Shielded Metal Arc Welding, Gas Metal Arc Welding, and Gas Tungsten Arc Welding processes. Students will learn welding theory as well as how to set up and operate these welding processes and complete labs with proficiency. Troubleshooting, along with specific job applications will be covered with these welding processes.

50442508 Welding Processes for Apprenticeships 2 (1 cr.) Focuses on the basic concepts of Shielded Metal Arc Welding, Gas Metal Arc Welding, and Gas Tungsten Arc Welding processes. Students will learn welding theory as well as how to set up and operate these welding processes and complete labs with proficiency. Troubleshooting, along with specific job applications will be covered with these welding processes.

423 - Millwright-Pipefitter Apprenticeship

50423519 Millwright Related 9 (2 cr.) Provides an introduction to the principles of mechanical power transmission, bearings and belt drives. Students must have completed an apprenticeship in Pipefitter prior to taking this course.

50423520 Millwright Related 10 (2 cr.) Provides related theory and hands-on lab instruction on chain drives, gears and rigging.

50423530 Millwright Related 11 (2 cr.) Provides instruction in basic metallurgy, machine and equipment installation, and coupling alignment.

50423531 Millwright Related 12 (2 cr.) Provides instruction on pumps and pumping systems and rotating equipment alignment.

50435540 Pipefitter Related 9 (2 cr.) Covers pipefitter math, process piping and drafting, and IPT pipe trades. Students must have completed an apprenticeship in Millwright prior to taking this course.

50435541 Pipefitter Related 10 (2 cr.) Covers pipefitter math, process piping, drafting and pipe trade information.

50435542 Pipefitter Related 11 (2 cr.) Covers HVAC fundamentals such as steam, steam heat and hot water heat. It also covers steam traps.

Course Descriptions

50435543 Pipefitter Related 12 (2 cr.)

Covers welding, burning and plasma cutting, template development and fasteners.

427 - Plumbing Apprentice

50427751 Sanitary Drains 1 (2 cr.)

Plumbing related instruction of sanitary drain systems. Course includes a review of codes and trade practices related to sanitary drains, drainage systems, components and applications.

50427752 Vents and Venting Systems (2 cr.)

This course is designed to provide the apprentice with the skills to identify and design sanitary vent piping in a plumbing system in accordance with the Wisconsin Plumbing Code. The course focuses on theory, work experience, and the application of plumbing code principles through discussions, drawing exercises, work sheets, and evaluations.

50427753 Water Distribution 1 (2 cr.)

This course provides the apprentice with the skills to identify, design, install and service various applications for water supply systems that are listed in plumbing codes. Apprentices will use the code language and tables in various plumbing systems in accordance with the Wisconsin Plumbing Code. Course topics will include commercial to single family and private well systems. The course focuses on theory, work experience, and the application of plumbing code principles through discussions, drawing exercises, work sheets, and evaluations.

50427754 Water Distribution 2 (2 cr.)

This course provides the apprentice with the skills to identify, design, install and service cross connection controls, water treatment equipment and multi-purpose piping systems in various plumbing systems in accordance with the Wisconsin Plumbing Code. The course focuses on theory, work experience, and the application of plumbing code principles through discussions, drawing exercises, work sheets, and evaluations.

50427755 Sanitary Drains 2 (2 cr.)

This course provides the apprentice with the skills to identify, design, install and service various applications for storm water, clear water, and drainage systems. Apprentices will use the code language and tables in various plumbing systems in accordance with the Wisconsin Plumbing Code. The course focuses on theory, work experience, and the application of plumbing code principles through discussions, drawing exercises, work sheets, and evaluations.

Course Descriptions

50427756 Private Onsite Wastewater Treatment Systems (POWTS cr.) (2 cr.)

This course provides the apprentice with the skills to identify, design, install and service various applications for private onsite wastewater treatment systems that are listed in plumbing codes or individual component manuals. Apprentices will use the code language and tables in various plumbing systems in accordance with the Wisconsin Plumbing Code. Other topics will include pretreatment, soil evaluation, site planning and new technologies. The course focuses on theory, work experience, and the application of plumbing code principles through discussions, work sheets, and evaluations.

50427757 Green Plumbing Applications (2 cr.)

This course provides plumbing apprentices with an introduction to green applications and prepares students to take certification exams.

50427758 Plumbing Advanced Topics/TSA (2 cr.)

This course provides the apprentice with the opportunity to select and complete an applied plumbing project in collaboration with the instructor. Projects will apply the skills required to identify, design, install and service various plumbing applications that are listed in plumbing codes. Apprentices will use the code language and tables in various plumbing systems in accordance with the Wisconsin Plumbing Code. The course builds upon the theory, work experience, and the application of plumbing code principles addressed in previous coursework to support completing an applied hands-on project.

435 - Pipefitting Apprentice

50435502 Pipefitter Related 2 (2 cr.)

Consists of trigonometry and related science as it pertains to the field of pipefitting. Science of matter, properties of solids, properties of liquids, properties of gases, work energy power, temperature and heat effects, and change of state are explored. Labs and related hands-on projects are also included.

50435503 Pipefitter Related 3 (2 cr.)

Consists of multiview drawings, Isometric drawings, and process pipe drawings. Also covered in process piping are definitions, rolling offsets, and solving parallel offsets. Layout of pipe intersections and uneven angles are studied. Labs and related hands-on projects are also included.

50435504 Pipefitter Related 4 (2 cr.)

Consists of steam concepts, steam trapping, boiler accessories, pressure reducing stations, steam piping, and high and low pressure boilers. Trigonometry concepts are reviewed and discussed. Labs and related hands-on projects are also included.

Course Descriptions

50435506 Pipefitter Related 6 (2 cr.)	Covers chemical handling as it relates to the paper industry and local manufacturing in this area. Template development through the use of the Layout w/1000 Ordinate book is practiced. Pipefitter related web sites are also explored to enhance the skill level of the trainee. An introduction to pneumatics and the laws the apply are reviewed and discussed. Labs and related hands-on projects are also included.
50435507 Pipefitter Related 7 (1 cr.)	Covers an introduction to fluid-power Systems. Compares and contrast hydraulic systems to pneumatic systems. Discusses the advantages and disadvantages of both hydraulic and pneumatic systems. Topics covered include safety and health, standards and symbols, hydraulic fluid, hydraulic power sources, fluid storage and distribution, actuators, and system control. Labs and related hands-on projects are also included.
50435508 Pipefitter Related 8 (1 cr.)	Covers hydraulic systems. Topics include accumulators, conditioning system fluid, and applying hydraulic power. Labs and hands-on related projects are also included.
50435511 Pipefitter Related 1 (2 cr.)	Consists of an introduction to the trade that explains the paid related requirements and protocol of attending school. Basic drafting techniques are covered, as well as an introduction to Orthographic Projections. Mathematics are covered, as well as an introduction to trigonometry. Labs and related hands-on projects are also included.
50435535 Pipefitter Related 5 (2 cr.)	Consists of the study of various valves and their functions and applications. Also covered in this section is the science of metallurgy and its application to the trade. Rigging is covered, as well as rigging safety and its application to the trade. Pipe insulation and the purpose and applications are discussed and studied.
50442507 Welding Processes for Apprenticeships 1 (1 cr.)	Focuses on the basic concepts of Shielded Metal Arc Welding, Gas Metal Arc Welding, and Gas Tungsten Arc Welding processes. Students will learn welding theory as well as how to set up and operate these welding processes and complete labs with proficiency. Troubleshooting, along with specific job applications will be covered with these welding processes.
50442508 Welding Processes for Apprenticeships 2 (1 cr.)	Focuses on the basic concepts of Shielded Metal Arc Welding, Gas Metal Arc Welding, and Gas Tungsten Arc Welding processes. Students will learn welding theory as well as how to set up and operate these welding processes and complete labs with proficiency. Troubleshooting, along with specific job applications will be covered with these welding processes.

435 - Steamfitting Apprentice

50435512 Steamfitter Related 2 (2 cr.) Steamfitter Related 2

50435513 Steamfitter Related 3 (2 cr.) Steamfitter Related 3

Course Descriptions

50435514 Steamfitter Related 4 (2 cr.)	Steamfitter Related 4
50435515 Steamfitter Related 5 (2 cr.)	Steamfitter Related 5
50435517 Steamfitter Related 7 (2 cr.)	Steamfitter Related 7
50435518 Steamfitter Related 8 (2 cr.)	Steamfitter Related 8
50435519 Steamfitter Related 1 (2 cr.)	This course will cover basic mathematics, blueprint reading and fluid flow physics, as they relate to the steamfitter trade.
50435520 Steamfitter Related 6 (2 cr.)	This course will cover steam heating processes, process steam, advanced pipe math, and advanced blueprint reading and isometric drawing.

439 - Tool and Die Tool & Die Apprentice

50419506 Hydraulics - Mach Apprentice	Hydraulics - Mach Apprentice
50420503 Machinery Handbook 1-Tables/Charts/Formulas (0 cr.)	Teaches students how to use the Machinery's Handbook to solve problems found in the machine shop environment. Topics include class of fits, fasteners, feeds and speeds, etc.
50420514 Metal Heat Treat-Properties-Methods-Testing (0 cr.)	Teaches students properties of different types of metals, heat-treatment of various materials, and testing processes of hardened materials.
50420516 Metrology/SPC (0 cr.)	Covers the use of measurement tools, calipers and micrometers, bore gauges, etc. Basic statistical process control to include charting, bell curves and process capability studies are also studied.
50420523 Jigs and Fixtures (0 cr.)	Teaches students to understand the use of jigs and fixtures in the modern machine shop, as well as the cost of fixturing to the manufacturer.
50420531 Machine Techniques 1, Lathes/Drilling (0 cr.)	Provides students with a basic understanding of the metal working lathes and drill press's components, basic safety and operation, and speeds and feeds calculations.
50420532 Machine Techniques 2, Power Saws/Milling (0 cr.)	Provides students with a basic understanding of power saws and milling machines, types of cutting tools and cutting tool selection. Basic safety and operation, speeds and feeds calculations will be covered.
50420533 Machine Techniques 3, Boring Mills/Planers (0 cr.)	Provides students with a basic understanding of surface and cylindrical grinders and wheel selection.
50420534 Cost Estimating (0 cr.)	Teaches students to estimate the cost of machined parts to the manufacturer, job types, employability, management styles, and job routing.
50420537 Carbide Machining/GD&T (0 cr.)	Incorporates an 8-hour Kennametal carbide machining seminar, covering insert selection, use of speeds and feeds, calculators, tool geometry and insert coatings. The course also includes 10 hours of instruction in geometric dimensioning and tolerance application of G.D.T. symbols on machine blueprints, to include tolerance of form, profile, location, orientation and runout.
50420538 Intro to Numerical Control (1 cr.)	Covers programming machine tools using EIA/ISO and G and M codes. Use of cutter compensation and canned machining cycles is also addressed.

Course Descriptions

50420539 CNC Programming (1 cr.)	Covers CNC conversational programming that will be done in assorted programming languages.
50420540 CAD/CAM-36 Hr (1 cr.)	Is an introduction to the basic concept of computer aided drafting and computer aided manufacturing.
50420571 Machinist Math 1, Fractions and Decimals (0 cr.)	Teaches students the use of fractions and decimals in the machine shop environment.
50420572 Machinist Math 2, Basic Algebra (0 cr.)	Teaches students to solve algebraic equations commonly used in the machining trade.
50420573 Machinist Math 3, Basic Geometry (0 cr.)	Teaches students to understand and apply basic geometry concepts and problems found in the machine tool trade.
50420574 Machinist Math 4, Right-Hand Trigonometry (0 cr.)	Teaches students to solve trig equations commonly used in the machine tool trade.
50421514 Blueprint Reading 1 - Machine Apprentice (0 cr.)	Covers basic blueprint reading, third-angle orthographic projection, sectional views.
50421516 Blueprint Reading 2 - Machine Apprentice (0 cr.)	Covers advanced blueprint reading, to include assembly prints, welding and gear prints.
50439550 Tool/Die Applications, Design/Research (2 cr.)	Teaches Tool & Die apprentices to design from concept a working stamping die set using AutoCAD and MasterCAM software systems to create blueprints and tool paths for part generation. Fundamentals of mold making, patternmaking, and stamping will also be covered.
50439551 Tool/Die Applications, Tool Assembly (2 cr.)	Provides Tool & Die Apprentices the opportunity to produce the product designed by them in design research class using CNC machines, manual machines, and wire E.D.M. machine. They will assemble and test the product.
50442502 Welding-Machinist Apprentice (0 cr.)	Introduces the student to the Gas Metal Arc Welding and the Gas Tungsten Arc Welding processes. Safety, power source setup and material selection are covered.
50809500 Job Relations - Apprentice (0 cr.)	Prepares students to deal effectively with people at all levels in the workplace by applying various human relations principles.
442 - Pipe Fabricator	
50442551 Pipe Fabricator Related 1 (1 cr.)	Provides the apprentice with math, algebra and trigonometry knowledge and develops skills in fittings, pipe and valve welding in flat, horizontal, vertical and overhead positions.
50442552 Pipe Fabricator Related 2 (1 cr.)	Provides the apprentice with math, algebra and trigonometry knowledge and develops skills in fittings, pipe and valve welding in all positions.
50442553 Pipe Fabricator Related 3 (1 cr.)	Provides the apprentice with math, algebra and trigonometry knowledge, and develops skills in fittings, pipe and valve welding in all welding positions.
50442554 Pipe Fabricator Related 4 (1 cr.)	Provides the apprentice with math, algebra and trigonometry knowledge and develops skills in fittings, pipe and valve welding in all welding positions.
50442555 Pipe Fabricator Related 5 (1 cr.)	Provides the apprentice with math, algebra and trigonometry knowledge and develops skills in fittings, pipes and valve welding in all welding positions.

Course Descriptions

50442556 Pipe Fabricator Related 6 (1 cr.)	Provides the apprentice with math, algebra and trigonometry knowledge and develops skills in fittings, pipe and valve welding in all positions.
50442557 Pipe Fabricator Related 7 (1 cr.)	Provides the apprentice with layout and takeoff knowledge and advanced welding and certification skills.
50442558 Pipe Fabricator Related 8 (2 cr.)	Provides the apprentice with layout and takeoff knowledge and advanced welding and certification skills.
442 - Production Welding	
10442123 GMAW Techniques 1 (2 cr.)	Demonstrates welding on steel sheet metals and plates. Emphasis is placed on axial spray, pulse spray and short circuit mode of transfer. Upon completion of this course, the student will be able to weld in all positions, read basic weld symbols, and have an understanding of written welding procedures.
10442124 GMAW Techniques 2 (2 cr.)	Teaches students to weld on stainless steel and aluminum sheet metal and plate. The student will be able to differentiate, select proper electrodes, shielding gases, and properly adjust parameters. Emphasis is placed on axial spray, pulse spray and short circuit mode of transfer depending on base metal. Upon completion of this course, the student will be able to weld in all positions, read some basic weld symbols, and have a basic understanding of written welding procedures.
10442125 FCAW Techniques (2 cr.)	A study and operation of primarily flux cored arc welding. The student will learn about the different types of electrodes, fluxes and shielding gases used in these processes. Students will be able to weld in all positions, read some basic weld symbols, and have a basic understanding of written welding procedures.
10442126 GTAW Techniques (2 cr.)	A study and operation of primarily gas tungsten arc welding on some mild steel, with the majority of work on stainless steel and aluminum. The student will learn about the different types of electrodes and shielding gases used in these processes. Students will be able to weld in all positions, read some basic weld symbols, and have a basic understanding of written welding procedures.
10442127 Robotic Arc Welding, Basic (2 cr.)	Provides a survey of multiple robot programs, safety and safety systems, learning maintenance, and program editing. Students will work with robot fixtures using the GMAW process.
10621105 Welding/Metal Fab Intro & Safety (1 cr.)	Provides instruction in welding and metal fabrication safety. Students will identify environmental work and personnel hazards common with the industry and proper personal protection methods. Students will also perform common tasks essential to utilization of the welding and metal fabrication lab.

Course Descriptions

10621108 Weld Print Reading (1 cr.)

Provides practice in reading shop drawings. Topics include orthographic projection, auxiliary views, revolved sections, surface and centerline relationships, isometric drawings, scale drawing and tolerances.

10621114 Weld Symbols (1 cr.)

Teaches students to interpret detailed weld symbols using the American Welding Society standard.

442 - Welding Fundamentals

10442123 GMAW Techniques 1 (2 cr.)

Demonstrates welding on steel sheet metals and plates. Emphasis is placed on axial spray, pulse spray and short circuit mode of transfer. Upon completion of this course, the student will be able to weld in all positions, read basic weld symbols, and have an understanding of written welding procedures.

10442124 GMAW Techniques 2 (2 cr.)

Teaches students to weld on stainless steel and aluminum sheet metal and plate. The student will be able to differentiate, select proper electrodes, shielding gases, and properly adjust parameters. Emphasis is placed on axial spray, pulse spray and short circuit mode of transfer depending on base metal. Upon completion of this course, the student will be able to weld in all positions, read some basic weld symbols, and have a basic understanding of written welding procedures.

10621105 Welding/Metal Fab Intro & Safety (1 cr.)

Provides instruction in welding and metal fabrication safety. Students will identify environmental work and personnel hazards common with the industry and proper personal protection methods. Students will also perform common tasks essential to utilization of the welding and metal fabrication lab.

10621108 Weld Print Reading (1 cr.)

Provides practice in reading shop drawings. Topics include orthographic projection, auxiliary views, revolved sections, surface and centerline relationships, isometric drawings, scale drawing and tolerances.

10621114 Weld Symbols (1 cr.)

Teaches students to interpret detailed weld symbols using the American Welding Society standard.

447 - Operating Operating Engineer Apprentice

50447515 Op Eng-Basic Paving (2 cr.)

Instructs students on the basics of paving and patching roadways and parking lots. Focuses on the safe and productive operation of pavers, compactors, motor graders, and other related paving equipment.

50447531 Basic/Telescopic Crane (2 cr.)

Instructs students at introductory level, to hoisting operations with mobile cranes. Key concepts are operator responsibility, principles of operation, terms/definitions and manufacturers' instructions.

Course Descriptions

50447536 Basic Maintenance (1 cr.)	Will introduce students to basic mobile equipment maintenance. Students will be instructed in maintaining engines, hydraulics, electrical systems, lubricants, and machine undercarriages with an emphasis on the use of the operator manual maintenance sections. Shop and field maintenance safety will be daily topics as well as proper use and identification of hand tools and shop tooling.
50447543 Operating Engineers Intro to Basic Equipment (1 cr.)	Introduces student to heavy equipment used in the construction industry. Students will also be instructed on basic safety, maintenance, and communication methods that operating engineers may be exposed to.
50447544 Operating Engineers Applied Basic Equipment (1 cr.)	Provides students with specialized instruction and valuable experience on basic heavy construction equipment. Emphasis will be geared toward practical exercises on safety, efficiency, and skill development.
50447584 Basic Grade (1 cr.)	Covers instruction in working with the engineers ruler using tenths and hundredths, how to calculate basic quantities, working with elevations, figuring cut and fill to finish grade and sub-grade. Topics also include interpreting and working with grade stakes while learning the basic grade setting and staking process. In the field students will be trained how to use lasers, eye levels, standard rods and lenker rods. Also includes a basic introduction to plan reading.
50447592 Construction Regulations (1 cr.)	Incorporates OSHA 10+, MSHA "New Miner and First Aid/CPR into one 40-hour class. Some of the topics covered: Blood-borne pathogens, confined space entry, demolition, electrical safety, excavations & trenching, fall protection, fire protection & hot-work, hazard communication, lockout/tag-out, material handling, hoists, cranes & rigging, motor vehicles & motorized equipment, Personal Protective Equipment (PPE), power industrial trucks, Process Safety Management (PSM), scaffolds, lifts, ladders & stairways, signs, signals, & barricades.
50447593 40-Hour Hazmat (1 cr.)	Provides basic information needed to protect HAZWOPER site workers from health, physical, and biological hazards. This course meets the requirements of OSHA 29 CFR 1910.120 (Hazardous Waste Operations and Emergency Response) and OSHA 29 CFR 1910.146 (Permit Required Confined Space). Instruction is a combination of both hands-on and classroom instruction.
449 - Industrial Construction Safety	
10449106 Construction Accident Prevention (3 cr.)	Examines the requirements for managing safety programs on construction sites, to include regulatory requirements, financial aspects, risk management, and loss reduction.

Course Descriptions

10449168 Fall Protection (3 cr.)	Discusses common methods of fall protection in the construction industry. Fixed fall protection systems, personal fall arrest systems, and drop prevention will be emphasized. Upon completion, students will meet the OSHA training requirements to be a Fall Protection Competent Person.
10449169 Material Handling in Construction (2 cr.)	Discusses common material handling situations within construction include crane safety, rigging requirements, powered industrial trucks, and manual material handling hazards.
10449171 Trenching and Excavation Safety (1 cr.)	Discusses the hazards associated with trenching and excavation with special emphasis placed on collapse prevention. Excavation hazards, protective systems, soil classifications, the role of the competent person and rescue options will be covered.
10449185 Construction Compliance (3 cr.)	Provides students with an understanding of common construction methods, hazards, and preventive measures. Will provide a detailed understanding of the OSHA Construction Standards, including Excavations, Fall Protection, Scaffolds, Steel Erection, Demolition, and Cranes and Derricks, as well as common components of successful construction safety programs.
449 - Industrial Construction Safety Technology	
10449102 Regulatory Compliance (3 cr.)	Provides the student with an introduction of the federal and state standards that apply to safety and health. The focus will be on how to research and respond to regulatory standards. Using on-line and off-line resources, the student will respond to a series of selected questions about regulatory compliance.
10449103 Accident Investigation (3 cr.)	Reviews the practices needed to conduct an effective and thorough accident investigation and prepare a comprehensive accident report. The student will learn to interview witnesses, prepare a site drawing, and gather appropriate visual evidence. In a simulated scenario, the student will prepare a comprehensive report on the incident.
10449106 Construction Accident Prevention (3 cr.)	Examines the requirements for managing safety programs on construction sites, to include regulatory requirements, financial aspects, risk management, and loss reduction.
10449109 Industrial Fire Protection (3 cr.)	Examines fire protection systems used within industry. Will cover fire chemistry, regulatory requirements of fire prevention, fixed fire extinguishing systems, and portable fire extinguishing systems. Use of the Incident Command System during emergency management will also be discussed.
10449115 Industrial Hygiene Concepts (3 cr.)	Introduces students to the concepts of Industrial Hygiene within industry. Includes a basic review of anatomy and physiology, hazard evaluation techniques, the use of common monitoring equipment, and the role of the industrial hygienist in a safety management system.

Course Descriptions

10449116 Conducting EHS Training (1 cr.)	Learn adult learning methods and models to conduct a wide variety of high level Environmental Safety and Health Training as required in Manufacturing and Construction industries.
10449118 Construction Hazard Recognition (3 cr.)	Introduces students to common hazards within the construction industry, including OSHA's Focus Four Hazard, Fall Protection Hazards, Excavation, Material Handling, Electrical Hazards, and associated protective measures.
10449120 Safety Management Systems (3 cr.)	Reviews common components of safety management systems within industry. Will cover the components of OSHA's Injury and Illness Prevention Programs, ANSI Z10, and ISO 45001.
10449162 Fundamentals of Occupational Safety (3 cr.)	Provides the learner with the fundamentals of occupational safety, including the business case for safety, common industrial hazards, hazard control, and common OSHA safety standards.
10449168 Fall Protection (3 cr.)	Discusses common methods of fall protection in the construction industry. Fixed fall protection systems, personal fall arrest systems, and drop prevention will be emphasized. Upon completion, students will meet the OSHA training requirements to be a Fall Protection Competent Person.
10449169 Material Handling in Construction (2 cr.)	Discusses common material handling situations within construction include crane safety, rigging requirements, powered industrial trucks, and manual material handling hazards.
10449171 Trenching and Excavation Safety (1 cr.)	Discusses the hazards associated with trenching and excavation with special emphasis placed on collapse prevention. Excavation hazards, protective systems, soil classifications, the role of the competent person and rescue options will be covered.
10449185 Construction Compliance (3 cr.)	Provides students with an understanding of common construction methods, hazards, and preventive measures. Will provide a detailed understanding of the OSHA Construction Standards, including Excavations, Fall Protection, Scaffolds, Steel Erection, Demolition, and Cranes and Derricks, as well as common components of successful construction safety programs.
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.

Course Descriptions

10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
10804113 College Technical Math 1A (3 cr.)	Topics include: solving linear equations; graphing; percent; proportions; measurement systems; computational geometry; and right triangle trigonometry. Emphasis will be on the application of skills to technical problems. Successful completion of College Technical Mathematics 1A and College Technical Mathematics 1B is the equivalent of College Technical Mathematics 1.
10806134 General Chemistry (4 cr.)	Covers the fundamentals of chemistry. Topics include scientific method, problem-solving using quantitative, characteristics of matter, periodic relationships of elements, chemical bonding, chemical reactions, chemical equilibrium, analysis of chemical substances, characteristics of aqueous solutions, acids, bases, and gas laws.
10806198 Human Biology (4 cr.)	This is an introductory course that emphasizes the structure of the human body and the functional interrelationships of the body's systems. Consideration is given to the human body and disease, human genetics, human ecology, and the role that humans play in the environment. The course consists of 3 hours of lecture and 2 hours of lab per week. Note: This course does not meet requirements for or substitute for General Anatomy and Physiology or Anatomy & Physiology I and II.
10809197 Contemporary Amer Society (3 cr.)	Examine the network of interdependent social systems which affect learners as employees, family members, and citizens. In this interdisciplinary course, learners will study public policy issues which illustrate how our traditional institutions such as family, education, government, work, and media are being changed by global, political, demographic, multicultural, and technological trends. By exploring contemporary issues, learners will expand their use of creative and critical thinking skills in evaluating information, making decisions, advocating positions, and participating in the democratic process.
10809199 Psychology of Human Relations (3 cr.)	Explores the relationship between the general principles of psychology and our everyday lives. Students are given the opportunity to achieve a deepened sense of awareness of themselves and others. This understanding enables students to improve their relationships with others at work, in the family, and in society.

449 - Industrial Environmental Compliance Specialist

Course Descriptions

10449134 Environmental Laws & Regulations in Industry (3 cr.)

Provides an overview of regulatory agencies at the local, state and federal levels that apply in an industrial setting. Coursework includes interpreting and applying laws, regulations, inspection programs and potential fines. It also addresses the development of resources to aid in regulatory compliance.

10449183 Hazardous Materials Management (3 cr.)

Provides information regarding relevant laws and regulations, relevant scientific principles and their application, and best management practices of hazardous materials.

449 - Industrial Essentials of Occupational Safety

10449102 Regulatory Compliance (3 cr.)

Provides the student with an introduction of the federal and state standards that apply to safety and health. The focus will be on how to research and respond to regulatory standards. Using on-line and off-line resources, the student will respond to a series of selected questions about regulatory compliance.

10449185 Construction Compliance (3 cr.)

Provides students with an understanding of common construction methods, hazards, and preventive measures. Will provide a detailed understanding of the OSHA Construction Standards, including Excavations, Fall Protection, Scaffolds, Steel Erection, Demolition, and Cranes and Derricks, as well as common components of successful construction safety programs.

449 - Industrial Manufacturing Safety

10449103 Accident Investigation (3 cr.)

Reviews the practices needed to conduct an effective and thorough accident investigation and prepare a comprehensive accident report. The student will learn to interview witnesses, prepare a site drawing, and gather appropriate visual evidence. In a simulated scenario, the student will prepare a comprehensive report on the incident.

10449119 Ergonomics (3 cr.)

Provides the student with an understanding of human engineering. The course will cover the methods to control repetitive motion injuries, office design, and the concept of ease and efficiency for industrial workers. Workstation design in the office and assembly line operations are a part of the class.

10449162 Fundamentals of Occupational Safety (3 cr.)

Provides the learner with the fundamentals of occupational safety, including the business case for safety, common industrial hazards, hazard control, and common OSHA safety standards.

449 - Industrial Safety Engineering Technology

10449102 Regulatory Compliance (3 cr.)

Provides the student with an introduction of the federal and state standards that apply to safety and health. The focus will be on how to research and respond to regulatory standards. Using on-line and off-line resources, the student will respond to a series of selected questions about regulatory compliance.

Course Descriptions

10449103 Accident Investigation (3 cr.)	Reviews the practices needed to conduct an effective and thorough accident investigation and prepare a comprehensive accident report. The student will learn to interview witnesses, prepare a site drawing, and gather appropriate visual evidence. In a simulated scenario, the student will prepare a comprehensive report on the incident.
10449109 Industrial Fire Protection (3 cr.)	Examines fire protection systems used within industry. Will cover fire chemistry, regulatory requirements of fire prevention, fixed fire extinguishing systems, and portable fire extinguishing systems. Use of the Incident Command System during emergency management will also be discussed.
10449115 Industrial Hygiene Concepts (3 cr.)	Introduces students to the concepts of Industrial Hygiene within industry. Includes a basic review of anatomy and physiology, hazard evaluation techniques, the use of common monitoring equipment, and the role of the industrial hygienist in a safety management system.
10449116 Conducting EHS Training (1 cr.)	Learn adult learning methods and models to conduct a wide variety of high level Environmental Safety and Health Training as required in Manufacturing and Construction industries.
10449119 Ergonomics (3 cr.)	Provides the student with an understanding of human engineering. The course will cover the methods to control repetitive motion injuries, office design, and the concept of ease and efficiency for industrial workers. Workstation design in the office and assembly line operations are a part of the class.
10449120 Safety Management Systems (3 cr.)	Reviews common components of safety management systems within industry. Will cover the components of OSHA's Injury and Illness Prevention Programs, ANSI Z10, and ISO 45001.
10449134 Environmental Laws & Regulations in Industry (3 cr.)	Provides an overview of regulatory agencies at the local, state and federal levels that apply in an industrial setting. Coursework includes interpreting and applying laws, regulations, inspection programs and potential fines. It also addresses the development of resources to aid in regulatory compliance.
10449162 Fundamentals of Occupational Safety (3 cr.)	Provides the learner with the fundamentals of occupational safety, including the business case for safety, common industrial hazards, hazard control, and common OSHA safety standards.
10449181 Safety Engineering and Technology (3 cr.)	Provides students with industrial safety safeguarding from an engineering and technology vantage. Topics include facility protection through design and maintenance, safeguarding options for production equipment, electrical safety technology, fire prevention and protection, and material handling.
10449183 Hazardous Materials Management (3 cr.)	Provides information regarding relevant laws and regulations, relevant scientific principles and their application, and best management practices of hazardous materials.

Course Descriptions

- 10449185 Construction Compliance (3 cr.)** Provides students with an understanding of common construction methods, hazards, and preventive measures. Will provide a detailed understanding of the OSHA Construction Standards, including Excavations, Fall Protection, Scaffolds, Steel Erection, Demolition, and Cranes and Derricks, as well as common components of successful construction safety programs.
- 10801195 Written Communication (3 cr.)** Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
- 10801196 Oral/Interpersonal Comm (3 cr.)** Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
- 10804113 College Technical Math 1A (3 cr.)** Topics include: solving linear equations; graphing; percent; proportions; measurement systems; computational geometry; and right triangle trigonometry. Emphasis will be on the application of skills to technical problems. Successful completion of College Technical Mathematics 1A and College Technical Mathematics 1B is the equivalent of College Technical Mathematics 1.
- 10806134 General Chemistry (4 cr.)** Covers the fundamentals of chemistry. Topics include scientific method, problem-solving using quantitative, characteristics of matter, periodic relationships of elements, chemical bonding, chemical reactions, chemical equilibrium, analysis of chemical substances, characteristics of aqueous solutions, acids, bases, and gas laws.
- 10806198 Human Biology (4 cr.)** This is an introductory course that emphasizes the structure of the human body and the functional interrelationships of the body's systems. Consideration is given to the human body and disease, human genetics, human ecology, and the role that humans play in the environment. The course consists of 3 hours of lecture and 2 hours of lab per week. Note: This course does not meet requirements for or substitute for General Anatomy and Physiology or Anatomy & Physiology I and II.

Course Descriptions

10809197 Contemporary Amer Society (3 cr.)	Examine the network of interdependent social systems which affect learners as employees, family members, and citizens. In this interdisciplinary course, learners will study public policy issues which illustrate how our traditional institutions such as family, education, government, work, and media are being changed by global, political, demographic, multicultural, and technological trends. By exploring contemporary issues, learners will expand their use of creative and critical thinking skills in evaluating information, making decisions, advocating positions, and participating in the democratic process.
10809199 Psychology of Human Relations (3 cr.)	Explores the relationship between the general principles of psychology and our everyday lives. Students are given the opportunity to achieve a deepened sense of awareness of themselves and others. This understanding enables students to improve their relationships with others at work, in the family, and in society.
455 - Supervision Construction Management Technology	
10101107 Accounting, Principles of (3 cr.)	Introduces basic concepts and general principles of accounting to non-accounting students. Topics include financial statements, merchandising accounting for cash, inventory, payroll, budgeting and accounting software.
10455101 Site Layout and Construction (CMT cr.) (2 cr.)	Focuses on the materials, methods and equipment used in site construction. Topics include soil characteristics, survey practices, building layout, excavation and shoring, utility placement, engineered fill, and water management. Students learn to interpret codes, prints and specifications pertinent to site construction.
10455102 Introduction to Construction Management (CMT cr.) (1 cr.)	Serves as an introduction to the construction management profession and the Construction Management program at FVTC. Provides students with an overview of residential, commercial and industrial construction practice prior to student co-op experience.
10455103 Understanding Construction Documents (CMT cr.) (1 cr.)	Explores the contents of construction documents including site civil, structural, architectural, and MEP design and specifications. Applies knowledge of the design and specifications through the interpretation of the drawings, models, and the project manual. Navigates all facets of the construction documents to examine a project by discipline and as a system.
10455104 Construction Engineering Fundamentals (CMT cr.) (3 cr.)	Covers the principles of statics and strength of materials required to understand basic construction engineering and solve simple design problems. Design problems include wood, steel and reinforced concrete frames.

Course Descriptions

10455106 Construction Estimating (CMT cr.) (2 cr.)	Teaches students the basics of construction estimating with an emphasis on quantity takeoff procedures for both detailed and conceptual estimates. Additional topics include types of estimates, types of contracts and evaluation of subcontractors. Students use Microsoft Excel software to prepare a detailed estimate from a set of working drawings.
10455107 Construction Management Internship (CMT cr.) (2 cr.)	Provides on-the-job learning for students to work within the management function of a residential, commercial, or industrial contractor, developer, or consultant. Students are responsible for securing their own employment—with assistance from the instructor. Students currently employed in the construction industry may receive credit for prior learning.
10455108 Construction Contracts and Law (CMT cr.) (2 cr.)	Explores the legal aspects of construction. Topics include types of contracts, contract procedures and documents, responsibilities of contractors and owners, reporting requirements, insurance, bonds, and change order management.
10455109 Construction Scheduling (CMT cr.) (2 cr.)	Teaches students to plan and schedule construction projects. Provides information on establishing schedule activities, durations and logic. Students will manually draw and calculate CPM (critical path method) schedules. Students are also introduced to computer-aided scheduling.
10455110 Software Fundamentals for Construction (CMT cr.) (1 cr.)	Applies business and construction software solutions to functional applications in construction. Explores and applies applications utilizing software that is needed to write and create documents, presentations, emails, and spreadsheets. Explores the use of project management and document management software. Collaborates with software and practices the use of business communication platforms utilized in the construction industry.
10455114 Construction Materials and Methods 1 (CMT cr.) (2 cr.)	Explores the materials and techniques used to construct foundation and structural shell systems of a building. Analyzes the capacity and requirements for efficient installation of concrete, steel, wood, and engineered systems to construct the structural core of a vertical structure including interior partition framing. Examines code compliancy, adherence with construction documents, and specific governing organizational guidelines.

Course Descriptions

10455115 Virtual Design and Construction (CMT cr.) (2 cr.)	Explore the integration of design, construction, and operations of construction projects through the use of Building Information Modeling (BIM) systems. Utilize Navisworks Manage to collaborate digital twin models. Create clash detection reports of building systems for BIM coordinated projects. Redline, mark up, measure 3D Navisworks models. Integrate cost loaded project schedules with time liner feature. Create take offs using the digital twin model. Moreover, learn Bluebeam techniques for efficient information sharing for preconstruction to closeout documents.
10455117 Construction Materials and Methods Lab (CMT cr.) (4 cr.)	Applies the methods of installation of core and shell elements of a vertical structure. Layout and install/erect structural building elements including cast-in-place and precast concrete, masonry, structural steel, steel trusses, steel deck, and cold-formed steel frame wall systems. Execute the planning, operational supervision, and installation of a commercial structure.
10455120 Revit Architecture (CMT cr.) (2 cr.)	Introduces students to principles of building information modeling through the utilization of Autodesk Revit Architecture. Basic entry level user skills and advanced modeling and documentation techniques will be mastered utilizing Autodesk Revit. Students will model commercial structures by creating a 3-D set of documents inclusive of plan, elevation, and section views including associated schedules and libraries.
10455123 Construction Financial Management (CMT cr.) (2 cr.)	Introduces the principles of financial management used by construction companies including budget management and cash flow. Emphasis is on the construction manager's role in project profitability. Analyses of construction economic factors through cost, schedule and productivity management. Topics include project cash flow, billing, budget status reports, true profit and value engineering studies.
10455126 Mechanical, Electrical & Plumbing Systems (CMT cr.) (3 cr.)	Focuses on the materials, methods and equipment used in mechanical, electrical and plumbing systems. Additional topics to include fire protection, communications and security systems. Students learn to interpret codes, prints and specifications pertinent to M.E.P. systems.
10455127 Construction Safety Management (CMT cr.) (2 cr.)	Provides training in Occupational Safety and Health Administration (OSHA) standards. Teaches strategies for creating a successful safety management plan. Students receive their OSHA 30-hr. Construction Safety card upon successful completion.

Course Descriptions

10455130 Construction Materials and Methods 2 (CMT cr.) (2 cr.)

Explores the materials and techniques used to construct exterior shell and core interior fit-out systems of a building. Analyzes the capacity and requirements for efficient installation of all elements and systems to construct the exterior shell of a vertical structure including thermal and moisture, roofing, cladding, glazing, sealants, flashing, and stormwater management. Analyzes the capacity and requirements for efficient installation of all elements and systems to construct the interior fit-out of a vertical structure including acoustics, openings, wall/ceiling/floor finishes, FF&E, specialties, and conveying systems including stairs. Examines code compliancy, adherence with construction documents, and specific organizational guidelines.

10455140 Construction Supervision (CMT cr.) (2 cr.)

Focuses on the function of construction supervision. Practices routine communication, reporting, and documentation techniques. Executes daily and weekly task requirements of a superintendent. Focuses on the oversight of project schedules, site logistics, safety, trade labor coordination, and quality control.

10455142 Sustainable Construction Practices (CMT cr.) (1 cr.)

Explores sustainable rating systems, design and construction of sustainable projects, and energy systems. Examines industry applications measured through the Triple Bottom Line principle: People, Planet, and Profit. Selection of construction methods that ensure construction projects minimize their environmental impact while supporting the economic wellbeing and social welfare of the communities in which they are constructed.

10455150 Construction Project Management (CMT cr.) (2 cr.)

Focuses on the leadership skills of a Construction Project Manager. Interactively explores the function and practice of leading a project team. Executes project initiation, planning, execution and control, and closeout activities. Practices effective communications techniques, human resource interface, and balance of workplace culture.

10455152 Industrialized Construction (CMT cr.) (2 cr.)

Explore principles of industrialized construction through the study of mechanized and automated construction techniques and applications. Apply methods for increasing labor productivity, utilization of mechanized assembly, prefabrication of components and assemblies, and fast-tracking installation and commissioning of construction projects. Employ integrated lean construction techniques to reduce costs, installation time, risk and re-work, and maintain project quality and safety.

Course Descriptions

10801195 Written Communication (3 cr.) Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.

10801196 Oral/Interpersonal Comm (3 cr.) Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.

10804113 College Technical Math 1A (3 cr.) Topics include: solving linear equations; graphing; percent; proportions; measurement systems; computational geometry; and right triangle trigonometry. Emphasis will be on the application of skills to technical problems. Successful completion of College Technical Mathematics 1A and College Technical Mathematics 1B is the equivalent of College Technical Mathematics 1.

10806143 College Physics 1 (3 cr.) Presents the applications and theory of basic physics principles. This course emphasizes problem solving, laboratory investigation and applications. Topics include laboratory safety, unit conversions and analysis, kinematics, dynamics, work, energy, power, temperature and heat.

10809195 Economics (3 cr.) This course is designed to give an overview of microeconomics, macroeconomics, and international economics. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues.

10809199 Psychology of Human Relations (3 cr.) Explores the relationship between the general principles of psychology and our everyday lives. Students are given the opportunity to achieve a deepened sense of awareness of themselves and others. This understanding enables students to improve their relationships with others at work, in the family, and in society.

455 - Supervision Construction Project Coordinator

10455101 Site Layout and Construction (CMT cr.) (2 cr.) Focuses on the materials, methods and equipment used in site construction. Topics include soil characteristics, survey practices, building layout, excavation and shoring, utility placement, engineered fill, and water management. Students learn to interpret codes, prints and specifications pertinent to site construction.

Course Descriptions

10455102 Introduction to Construction Management (CMT cr.) (1 cr.)	Serves as an introduction to the construction management profession and the Construction Management program at FVTC. Provides students with an overview of residential, commercial and industrial construction practice prior to student co-op experience.
10455103 Understanding Construction Documents (CMT cr.) (1 cr.)	Explores the contents of construction documents including site civil, structural, architectural, and MEP design and specifications. Applies knowledge of the design and specifications through the interpretation of the drawings, models, and the project manual. Navigates all facets of the construction documents to examine a project by discipline and as a system.
10455110 Software Fundamentals for Construction (CMT cr.) (1 cr.)	Applies business and construction software solutions to functional applications in construction. Explores and applies applications utilizing software that is needed to write and create documents, presentations, emails, and spreadsheets. Explores the use of project management and document management software. Collaborates with software and practices the use of business communication platforms utilized in the construction industry.
10455114 Construction Materials and Methods 1 (CMT cr.) (2 cr.)	Explores the materials and techniques used to construct foundation and structural shell systems of a building. Analyzes the capacity and requirements for efficient installation of concrete, steel, wood, and engineered systems to construct the structural core of a vertical structure including interior partition framing. Examines code compliancy, adherence with construction documents, and specific governing organizational guidelines.
10455117 Construction Materials and Methods Lab (CMT cr.) (4 cr.)	Applies the methods of installation of core and shell elements of a vertical structure. Layout and install/erect structural building elements including cast-in-place and precast concrete, masonry, structural steel, steel trusses, steel deck, and cold-formed steel frame wall systems. Execute the planning, operational supervision, and installation of a commercial structure.
10455126 Mechanical, Electrical & Plumbing Systems (CMT cr.) (3 cr.)	Focuses on the materials, methods and equipment used in mechanical, electrical and plumbing systems. Additional topics to include fire protection, communications and security systems. Students learn to interpret codes, prints and specifications pertinent to M.E.P. systems.
10455127 Construction Safety Management (CMT cr.) (2 cr.)	Provides training in Occupational Safety and Health Administration (OSHA) standards. Teaches strategies for creating a successful safety management plan. Students receive their OSHA 30-hr. Construction Safety card upon successful completion.

Course Descriptions

10455130 Construction Materials and Methods 2 (CMT cr.) (2 cr.)

Explores the materials and techniques used to construct exterior shell and core interior fit-out systems of a building. Analyzes the capacity and requirements for efficient installation of all elements and systems to construct the exterior shell of a vertical structure including thermal and moisture, roofing, cladding, glazing, sealants, flashing, and stormwater management. Analyzes the capacity and requirements for efficient installation of all elements and systems to construct the interior fit-out of a vertical structure including acoustics, openings, wall/ceiling/floor finishes, FF&E, specialties, and conveying systems including stairs. Examines code compliancy, adherence with construction documents, and specific organizational guidelines.

10455140 Construction Supervision (CMT cr.) (2 cr.)

Focuses on the function of construction supervision. Practices routine communication, reporting, and documentation techniques. Executes daily and weekly task requirements of a superintendent. Focuses on the oversight of project schedules, site logistics, safety, trade labor coordination, and quality control.

455 - Supervision Construction Project Supervision

10455106 Construction Estimating (CMT cr.) (2 cr.)

Teaches students the basics of construction estimating with an emphasis on quantity takeoff procedures for both detailed and conceptual estimates. Additional topics include types of estimates, types of contracts and evaluation of subcontractors. Students use Microsoft Excel software to prepare a detailed estimate from a set of working drawings.

10455108 Construction Contracts and Law (CMT cr.) (2 cr.)

Explores the legal aspects of construction. Topics include types of contracts, contract procedures and documents, responsibilities of contractors and owners, reporting requirements, insurance, bonds, and change order management.

10455109 Construction Scheduling (CMT cr.) (2 cr.)

Teaches students to plan and schedule construction projects. Provides information on establishing schedule activities, durations and logic. Students will manually draw and calculate CPM (critical path method) schedules. Students are also introduced to computer-aided scheduling.

10455110 Software Fundamentals for Construction (CMT cr.) (1 cr.)

Applies business and construction software solutions to functional applications in construction. Explores and applies applications utilizing software that is needed to write and create documents, presentations, emails, and spreadsheets. Explores the use of project management and document management software. Collaborates with software and practices the use of business communication platforms utilized in the construction industry.

Course Descriptions

10455123 Construction Financial Management (CMT cr.) (2 cr.)

Introduces the principles of financial management used by construction companies including budget management and cash flow. Emphasis is on the construction manager's role in project profitability. Analyses of construction economic factors through cost, schedule and productivity management. Topics include project cash flow, billing, budget status reports, true profit and value engineering studies.

10455127 Construction Safety Management (CMT cr.) (2 cr.)

Provides training in Occupational Safety and Health Administration (OSHA) standards. Teaches strategies for creating a successful safety management plan. Students receive their OSHA 30-hr. Construction Safety card upon successful completion.

10455140 Construction Supervision (CMT cr.) (2 cr.)

Focuses on the function of construction supervision. Practices routine communication, reporting, and documentation techniques. Executes daily and weekly task requirements of a superintendent. Focuses on the oversight of project schedules, site logistics, safety, trade labor coordination, and quality control.

10455150 Construction Project Management (CMT cr.) (2 cr.)

Focuses on the leadership skills of a Construction Project Manager. Interactively explores the function and practice of leading a project team. Executes project initiation, planning, execution and control, and closeout activities. Practices effective communications techniques, human resource interface, and balance of workplace culture.

455 - Supervision Construction, Small Business Management

10145104 Entrepreneurship, Introduction to (3 cr.)

Provides students with opportunities to investigate, understand and apply the process of choosing entrepreneurship as a career path. Explores the entrepreneurial experience by focusing on an awareness of entrepreneurship, opportunity recognition, business concept development and preliminary feasibility testing. Students gain the knowledge, skills, concepts and strategies relevant for start-up and early-stage entrepreneurs. The practical hands-on approach encourages students to immerse themselves in the entrepreneurial experience.

10455108 Construction Contracts and Law (CMT cr.) (2 cr.)

Explores the legal aspects of construction. Topics include types of contracts, contract procedures and documents, responsibilities of contractors and owners, reporting requirements, insurance, bonds, and change order management.

Course Descriptions

10455110 Software Fundamentals for Construction (CMT cr.) (1 cr.)

Applies business and construction software solutions to functional applications in construction. Explores and applies applications utilizing software that is needed to write and create documents, presentations, emails, and spreadsheets. Explores the use of project management and document management software. Collaborates with software and practices the use of business communication platforms utilized in the construction industry.

10455123 Construction Financial Management (CMT cr.) (2 cr.)

Introduces the principles of financial management used by construction companies including budget management and cash flow. Emphasis is on the construction manager's role in project profitability. Analyses of construction economic factors through cost, schedule and productivity management. Topics include project cash flow, billing, budget status reports, true profit and value engineering studies.

10455140 Construction Supervision (CMT cr.) (2 cr.)

Focuses on the function of construction supervision. Practices routine communication, reporting, and documentation techniques. Executes daily and weekly task requirements of a superintendent. Focuses on the oversight of project schedules, site logistics, safety, trade labor coordination, and quality control.

10455150 Construction Project Management (CMT cr.) (2 cr.)

Focuses on the leadership skills of a Construction Project Manager. Interactively explores the function and practice of leading a project team. Executes project initiation, planning, execution and control, and closeout activities. Practices effective communications techniques, human resource interface, and balance of workplace culture.

457 - Metal Metal Fabrication/Welding

10442121 SMAW Techniques 1 (2 cr.)

Covers the process commonly known as stick welding. Upon completion of this course, the student will be able to weld in all positions, read some basic weld symbols, and have a basic understanding of written welding procedures.

10442123 GMAW Techniques 1 (2 cr.)

Demonstrates welding on steel sheet metals and plates. Emphasis is placed on axial spray, pulse spray and short circuit mode of transfer. Upon completion of this course, the student will be able to weld in all positions, read basic weld symbols, and have an understanding of written welding procedures.

10442124 GMAW Techniques 2 (2 cr.)

Teaches students to weld on stainless steel and aluminum sheet metal and plate. The student will be able to differentiate, select proper electrodes, shielding gases, and properly adjust parameters. Emphasis is placed on axial spray, pulse spray and short circuit mode of transfer depending on base metal. Upon completion of this course, the student will be able to weld in all positions, read some basic weld symbols, and have a basic understanding of written welding procedures.

Course Descriptions

10442125 FCAW Techniques (2 cr.)	A study and operation of primarily flux cored arc welding. The student will learn about the different types of electrodes, fluxes and shielding gases used in these processes. Students will be able to weld in all positions, read some basic weld symbols, and have a basic understanding of written welding procedures.
10442126 GTAW Techniques (2 cr.)	A study and operation of primarily gas tungsten arc welding on some mild steel, with the majority of work on stainless steel and aluminum. The student will learn about the different types of electrodes and shielding gases used in these processes. Students will be able to weld in all positions, read some basic weld symbols, and have a basic understanding of written welding procedures.
10442127 Robotic Arc Welding, Basic (2 cr.)	Provides a survey of multiple robot programs, safety and safety systems, learning maintenance, and program editing. Students will work with robot fixtures using the GMAW process.
10442128 Pipe Welding Techniques (2 cr.)	Teaches students how to weld pipe using welding processes including GMAW, FCAW and GTAW. The students will be able to interpret a written welding procedure. Emphasis will be placed on ASME Section 9. Upon completion of this course, the student will be able to weld pipe in all positions.
10457131 Manufacturing Enterprises for Fabrication (3 cr.)	Covers the methods and process involved in manufacturing production parts. The course is set up to operate like a production fabrication facility where the student fabricates a product based on customer's specification. Products that are developed must meet customer's quality expectations.
10457160 Manufacturing Processes (2 cr.)	Covers punching, drilling, rolling, bending and forming. Sub-assembly parts are produced using various types of equipment. The parts may be joined, by welding, to complete an assembly. Students work in a team environment to complete an assignment. It is recommended that the student have an ACCUPLACER Arithmetic score of 65 or greater or successful completion of equivalent Program Prep course or College Technical Math 1A (10-804-113) or College Technical Math 1 (10-804-115).
10457161 Cutting Processes (2 cr.)	Covers shearing, sawing, laser cutting, abrasive water jet cutting, oxy-fuel cutting, plasma arc cutting and air-carbon arc cutting. Individual parts are produced using computerized and manual equipment. The parts may be joined, by welding, to complete an assembly. Students work in a team environment to complete an assignment.
10621105 Welding/Metal Fab Intro & Safety (1 cr.)	Provides instruction in welding and metal fabrication safety. Students will identify environmental work and personnel hazards common with the industry and proper personal protection methods. Students will also perform common tasks essential to utilization of the welding and metal fabrication lab.

Course Descriptions

10621108 Weld Print Reading (1 cr.)	Provides practice in reading shop drawings. Topics include orthographic projection, auxiliary views, revolved sections, surface and centerline relationships, isometric drawings, scale drawing and tolerances.
10621114 Weld Symbols (1 cr.)	Teaches students to interpret detailed weld symbols using the American Welding Society standard.
10621129 2D/3D CAD Modeling for Welders (2 cr.)	Provides instruction and practice in using current computer automated drafting and modeling software. Each student will develop a detailed drawing on the CAD system, complete with weld symbols and a modeled representation of a product design suitable for production.
10804107 College Mathematics (3 cr.)	This course is designed to review and develop fundamental concepts of mathematics in the areas of algebra, geometry, trigonometry, measurement and data. Algebra topics emphasize simplifying algebraic expressions, solving linear equations and inequalities with one variable, solving proportions and percent applications. Geometry and trigonometry topics include; finding areas and volumes of geometric figures, applying similar and congruent triangles, applying Pythagorean Theorem, and solving right triangles using trigonometric ratios. Measurement topics emphasize the application of measurement concepts and conversion techniques within and between U.S. customary and metric system to solve problems. Data topics emphasize data organization and summarization skills, including: frequency distributions, central tendency, relative position and measures of dispersion. Special emphasis is placed on problem solving, critical thinking and logical reasoning, making connections, and using calculators.

458 - Commercial CDL Straight Truck

30458301 Commercial Driver's License-Theory (2 cr.) Covers Federal Motor Carrier Safety Regulations (FMCSRs) information, basic operation, vehicle review, and operating guidelines for a Class A commercial combination motor vehicle. Additional topics include safe operating procedures and advanced operating practices.

30458306 Class B CDL-Range and Road (3 cr.) Covers Federal Motor Carrier Safety Regulations (FMCSRs) information, basic operation, vehicle review, and operating guidelines for a Class B commercial motor vehicle. Additional topics include safe operating procedures and advanced operating practices.

458 - Commercial Truck Driving

30458301 Commercial Driver's License-Theory (2 cr.) Covers Federal Motor Carrier Safety Regulations (FMCSRs) information, basic operation, vehicle review, and operating guidelines for a Class A commercial combination motor vehicle. Additional topics include safe operating procedures and advanced operating practices.

Course Descriptions

30458302 Class A CDL-Behind the Wheel Range (3 cr.)

Covers behind the wheel activities including the operation of a combination commercial motor vehicle. Driving exercises related to basic vehicle control skills and mastery of basic maneuvers, necessary to operate the vehicle safely, are conducted. Proper techniques of vehicle inspections, backing exercises, coupling and uncoupling of a Class A commercial combination motor vehicle, are developed.

30458303 Class A CDL-Behind the Wheel Public Road (3 cr.)

Covers behind the wheel activities driving a Class A commercial combination vehicle in a variety of public roadway situations and conditions. Road driving prepares the student with the necessary skills required to earn a Class A commercial driver's license (CDL).

30458304 Commercial Driver's License-Theory 2 (1 cr.)

Covers federal Motor Carrier Safety Regulations (FMCSRs) information for a Class A commercial combination motor vehicle. Additional topics include professional operating procedures and specialty vehicle operations.

458 - Commercial Truck Driving - Apprenticeship

47458406 Entry-Level Driver Training CDL Theory (0 cr.)

This course covers Federal Motor Carrier Safety Regulations (FMCSRs) information, basic operation, vehicle review, and operating guidelines for Class A and Class B commercial combination motor vehicles. Additional topics include safe operating procedures and advanced operating practices. This course meets the mandated Entry-Level Driver Training (ELDT) requirements in accordance to Title 49 Part 380 of the Code of Federal Regulations.

47458455 Partnership-Class A CDL-Manual Transmission (4 cr.)

Focuses on specific training for new hires with minimal or no driving experience with a manual transmission class A commercial vehicle. Upon completion of the Entry Level Driver Training and CDL test the driver will be ready to accompany a company's road trainer for further company-specific training. Included with the class is a workshop on FVTC's skid pad.

461 - Small Engine + Chassis Outdoor Power Entrepreneur

10145104 Entrepreneurship, Introduction to (3 cr.)

Provides students with opportunities to investigate, understand and apply the process of choosing entrepreneurship as a career path. Explores the entrepreneurial experience by focusing on an awareness of entrepreneurship, opportunity recognition, business concept development and preliminary feasibility testing. Students gain the knowledge, skills, concepts and strategies relevant for start-up and early-stage entrepreneurs. The practical hands-on approach encourages students to immerse themselves in the entrepreneurial experience.

10461151 OPE Four Stroke Engines (3 cr.)

Gives an in-depth overview of engine design and operational theory. Parts identification, function and repair are incorporated into the disassembly, reconditioning and assembly of small engines and recreational engines.

Course Descriptions

10461152 OPE Two Stroke Engines (3 cr.)	Emphasizes the repair of two-cycle, small four-cycle and recreational engines used on chainsaws, cutoff saws, line trimmers, backpack blowers, hedge trimmers and other small power units. Students will learn new emission requirements and understand the current laws on product liability.
31461301 Intro to Outdoor Power Equipment (2 cr.)	Introduces the student to the outdoor power equipment/powersports industry. Emphasizes safety, precision measuring, fasteners, tool usage, basic shop skills and predelivery/maintenance inspection of equipment. Utilizes computer software programs to create work orders, invoices and parts look up.
461 - Small Engine + Chassis	Outdoor Power Equipment Technician
10442120 Related Welding (1 cr.)	Prepares students with the common techniques and procedures for SMAW, GMAW, GTAW, and FCAW welding in a repair or machine shop environment. Topics include welding metal, cutting metal with plasma and oxy-fuel, and metal identification. Laboratory activities will provide the student with hands-on practice.
10461151 OPE Four Stroke Engines (3 cr.)	Gives an in-depth overview of engine design and operational theory. Parts identification, function and repair are incorporated into the disassembly, reconditioning and assembly of small engines and recreational engines.
10461152 OPE Two Stroke Engines (3 cr.)	Emphasizes the repair of two-cycle, small four-cycle and recreational engines used on chainsaws, cutoff saws, line trimmers, backpack blowers, hedge trimmers and other small power units. Students will learn new emission requirements and understand the current laws on product liability.
10461153 OPE DC Electrical & Fuel Mgmt Systems (3 cr.)	Covers Ohm's Law and electrical theory, operation and troubleshooting methods for batteries, starting circuits, charging circuits and accessories. Students will use electronic fuel injection (EFI) software applications to monitor engine functions and diagnose performance complaints. Manufacture certifications may be available in this course.
10461154 Hydraulics, Drivelines, and Chassis (3 cr.)	Focuses on the equipment used in groundskeeping, landscaping and maintenance of turf grass. Belt and gear drives, hydrostatic transaxles and hydraulic systems used for lawn mowers, tillers, snowblowers, garden tractors, zero-turn mowers and compact tractors are included in this course. Manufacture certifications may be available in this course.
10461156 Motorcycle & Moped Service & Repair (3 cr.)	Teaches students pre-delivery setup and inspections on motorcycles & mopeds. Tune-up procedures and maintenance repairs will be emphasized, including clutches, transmissions, drivelines, ABS brakes, tires, wheels and suspensions. Proper trailer securements and safety tie-downs of motorcycles will also be covered.

Course Descriptions

10461157 ATV & UTV Service & Repair (3 cr.)	Teaches students pre-delivery setup and inspections on ATV/UTV. Tune-up procedures and maintenance repairs will be covered, including clutches, transmissions, drivelines, brakes, tires, wheels and suspensions. Manufacture certifications may be available in this course.
10461158 Motorcycle & Moped Electrical Diagnostics (3 cr.)	Emphasizes motorcycle & moped electrical systems including starting, charging, and accessory circuits, schematics, ABS brakes, diagnostics and troubleshooting. Electronic fuel injection (EFI) software applications will be used to monitor engine functions and diagnose problems.
10461159 ATV & UTV Electrical & Diagnostics (3 cr.)	Emphasizes ATV & UTV electrical systems including starting, charging, and accessory circuits, schematics, diagnostics and troubleshooting. Electronic fuel injection (EFI) software applications will be used to monitor engine functions and diagnose problems.
31461301 Intro to Outdoor Power Equipment (2 cr.)	Introduces the student to the outdoor power equipment/powersports industry. Emphasizes safety, precision measuring, fasteners, tool usage, basic shop skills and predelivery/maintenance inspection of equipment. Utilizes computer software programs to create work orders, invoices and parts look up.
31461302 Outdoor Power Equipment Diesel Engine Systems (2 cr.)	Provides technicians with skills and knowledge of diesel engine theory, compression, fuel, electrical, cooling and lubrication systems along with emissions compliance standards. Manufacture certifications may be available in this course.
31801318 Communication, Applied (2 cr.)	Focuses on technical vocabulary, business writing, job search strategies, interpersonal communication and oral presentation skills through individual and group activities. Open enrollment for all students. It is recommended, but not required, that the student have basic computer skills, HS GPA 2.75+ OR ACPL Read 54+/Sent 83+, Next Gen Read 250+/Sent 237+, ACT Read 18+/Engl 15+ OR Read Prep 10838105/Sent Prep 74851745 OR not pursuing a degree. Personal/professional development students who have not taken the ACCUPLACER test need to consult with their instructor during the first class.

462 - Industrial Equip Industrial Maintenance Foundations

10449188 Essentials of Manufacturing Safety (1 cr.)	Provides information on the safety responsibilities of workers within the manufacturing industry. Special emphasis will be placed on common hazards and methods of controls.
10620111 Pneumatics 1 (1 cr.)	Provides an introduction to fundamental principles and laws of fluid power, with a focus on pneumatics. Laboratory activities are performed to verify the theory.

Course Descriptions

10620112 Pneumatics 2 (1 cr.)	Introduces advanced pneumatic and electropneumatic systems. Students examine how pneumatic components operate and how they interact in industrial systems. Laboratory activities are performed to verify the theory.
10620164 Elements of Machines 1 (1 cr.)	Emphasizes the mechanical elements of industrial machines. Principles of leveling motors, fasteners, bearings, and couplings are covered. Terminology, selection, and proper installation and maintenance are stressed.
10620165 Elements of Machines 2 (1 cr.)	Emphasizes the mechanical elements of industrial machines. Principles of power transmission, belt drives, and chain drives are covered. Terminology, selection, and proper installation and maintenance are stressed.
10628101 Concepts of Programming for Technicians (1 cr.)	Introduces students to programming fundamentals necessary in automation related careers. Students will discuss proper programming structures including flow chart and pseudocode programming. Students will create and troubleshoot programs.
10628151 PLC 1 (1 cr.)	Introduces Programmable Logic Controllers (PLC)s and RSLogix 500 Programming Software. The PLC hardware will consist of Allen Bradley products. Students use the RSLogix 500 programming software to create logical solutions for real world applications. The applications will require students to create, download, and debug programs in RSLogix 500.
10628187 AutoCAD Fundamentals (1 cr.)	Teaches students to draw, edit, dimension, and plot drawings with the AutoCAD software.
10660110 DC Circuits 1 (1 cr.)	Introduces electrical safety and program procedures. The course covers Ohm's Law, power law, series circuits, and voltmeter, ammeter and ohmmeter applications. Number powers, electronic notations, circuit component recognition and diagrams, resistor power ratings, color code, Kirchhoff's voltage law and atomic structure are also included.
10660111 DC Circuits 2 (1 cr.)	Covers basic parallel and series-parallel circuits and their properties. Examines the theory, application and design of series-parallel circuits, such as loaded and unloaded voltage dividers and the Wheatstone bridge. Laboratory activities are performed to verify the theory.
10660112 DC Circuits 3 (1 cr.)	Covers capacitors and inductors including time constants and instantaneous voltage and current values of RC and RL circuits. Applications and various types of capacitors and inductors are discussed. Magnetism, electromagnetism, and devices, such as relays and solenoids, are also presented. Laboratory activities are performed to verify the theory.
10660114 AC Circuits 1 (1 cr.)	Covers AC waveforms and different voltage values including Peak, RMS, Average and Peak to Peak. The operation of transformers is also included. Laboratory activities using the oscilloscope are performed to verify the theory.

Course Descriptions

10660170 Ladder Logic & Control Devices (1 cr.)

Introduces hardwired components found in industrial applications used to control simple circuits. Students will learn about switches, relays, contactors, timers, and indicator lamps. Students will use their knowledge of these devices to wire various circuits. Students will use ladder logic diagrams to interconnect and label devices to make complete circuits.

10804113 College Technical Math 1A (3 cr.)

Topics include: solving linear equations; graphing; percent; proportions; measurement systems; computational geometry; and right triangle trigonometry. Emphasis will be on the application of skills to technical problems. Successful completion of College Technical Mathematics 1A and College Technical Mathematics 1B is the equivalent of College Technical Mathematics 1.

462 - Industrial Equip Industrial Maintenance Mechanic

10449188 Essentials of Manufacturing Safety (1 cr.)

Provides information on the safety responsibilities of workers within the manufacturing industry. Special emphasis will be placed on common hazards and methods of controls.

10620111 Pneumatics 1 (1 cr.)

Provides an introduction to fundamental principles and laws of fluid power, with a focus on pneumatics. Laboratory activities are performed to verify the theory.

10620112 Pneumatics 2 (1 cr.)

Introduces advanced pneumatic and electropneumatic systems. Students examine how pneumatic components operate and how they interact in industrial systems. Laboratory activities are performed to verify the theory.

10620142 Motors and Drives 2 (1 cr.)

Introduces AC Generators, Three Phase, and Single Phase motors. Starting methods for AC motors, including AC Drives, will be introduced. Control wiring and reversing circuits will also be introduced. Students will wire for Synchronous and Induction motor operation.

10620148 Motors and Drives 1 (1 cr.)

Introduces DC motors and generators, along with DC Drives. Students will wire both separately-excited and self-excited DC generators. Counter Electromotive Force (CEMF) will be used to explain the operational principles of DC motors and generators. Various DC motor types will be introduced. Motor types include series, shunt, and compound motors.

10620164 Elements of Machines 1 (1 cr.)

Emphasizes the mechanical elements of industrial machines. Principles of leveling motors, fasteners, bearings, and couplings are covered. Terminology, selection, and proper installation and maintenance are stressed.

10620165 Elements of Machines 2 (1 cr.)

Emphasizes the mechanical elements of industrial machines. Principles of power transmission, belt drives, and chain drives are covered. Terminology, selection, and proper installation and maintenance are stressed.

Course Descriptions

10620188 System Troubleshooting (1 cr.)	Develops troubleshooting skills by using several closed-loop systems on a level and flow process trainer. Students identify faults electrically inserted into this trainer by recognizing symptoms, creating and using flow charts for analysis, and finding the problem with test instruments.
10628101 Concepts of Programming for Technicians (1 cr.)	Introduces students to programming fundamentals necessary in automation related careers. Students will discuss proper programming structures including flow chart and pseudocode programming. Students will create and troubleshoot programs.
10628113 Electronic Construction Applications (1 cr.)	Introduces industrial control panel design, layout, mounting, and wiring of industrial relays, push buttons, pilot lights, plc, fuses, transformers, 3 phase motor, and motor starters are applied. Quality installation and NEC standards are emphasized throughout the course.
10628151 PLC 1 (1 cr.)	Introduces Programmable Logic Controllers (PLC)s and RSLogix 500 Programming Software. The PLC hardware will consist of Allen Bradley products. Students use the RSLogix 500 programming software to create logical solutions for real world applications. The applications will require students to create, download, and debug programs in RSLogix 500.
10628152 PLC 2 (1 cr.)	Introduces Programmable Logic Controllers (PLC)s and Studio 5000 (formerly RSLogix5000) Programming Software. The PLC hardware will consist of Allen Bradley products. Students will configure Ethernet communications to connect to the Allen Bradley PLC hardware. Students will use Studio 5000 programming software to create logical solutions for real world applications. The applications will require students to create, download, and debug their programs. Students will study industrial sensors and their uses. Students will wire and test sensor operations.
10628153 PLC 3 (1 cr.)	Continues using the Allen Bradley PLC hardware platform with Studio 5000 programming software. Introduces Analog I/O and scaling for program interfacing. Scaling with math instructions, data handling with FIFO/LIFO instructions, and sequencer SQI/SQO instructions are all introduced.
10628159 Operator Interfaces (1 cr.)	Introduces Human Machine Interface (HMI) development. Students create Displays, HMI tags, Basic Objects, Object Animations, Global Objects, Alarms, and Trending.
10628187 AutoCAD Fundamentals (1 cr.)	Teaches students to draw, edit, dimension, and plot drawings with the AutoCAD software.
10628188 Blueprint Reading & AutoCAD (1 cr.)	Introduces students to reading both electrical schematics and mechanical prints, while utilizing the AutoCAD software.

Course Descriptions

10660110 DC Circuits 1 (1 cr.)	Introduces electrical safety and program procedures. The course covers Ohm's Law, power law, series circuits, and voltmeter, ammeter and ohmmeter applications. Number powers, electronic notations, circuit component recognition and diagrams, resistor power ratings, color code, Kirchhoff's voltage law and atomic structure are also included.
10660111 DC Circuits 2 (1 cr.)	Covers basic parallel and series-parallel circuits and their properties. Examines the theory, application and design of series-parallel circuits, such as loaded and unloaded voltage dividers and the Wheatstone bridge. Laboratory activities are performed to verify the theory.
10660112 DC Circuits 3 (1 cr.)	Covers capacitors and inductors including time constants and instantaneous voltage and current values of RC and RL circuits. Applications and various types of capacitors and inductors are discussed. Magnetism, electromagnetism, and devices, such as relays and solenoids, are also presented. Laboratory activities are performed to verify the theory.
10660114 AC Circuits 1 (1 cr.)	Covers AC waveforms and different voltage values including Peak, RMS, Average and Peak to Peak. The operation of transformers is also included. Laboratory activities using the oscilloscope are performed to verify the theory.
10660170 Ladder Logic & Control Devices (1 cr.)	Introduces hardwired components found in industrial applications used to control simple circuits. Students will learn about switches, relays, contactors, timers, and indicator lamps. Students will use their knowledge of these devices to wire various circuits. Students will use ladder logic diagrams to interconnect and label devices to make complete circuits.
10660181 Technical Software Essentials (1 cr.)	Introduces students to the Microsoft Office family of products. Students will create and edit Word documents, Excel spreadsheets, and Access databases.
10660184 Computer Systems & Networks 1 (1 cr.)	Focuses on computer terms, computer hardware, computer functions, security and operating systems. Basic networking concepts are also introduced.
10804113 College Technical Math 1A (3 cr.)	Topics include: solving linear equations; graphing; percent; proportions; measurement systems; computational geometry; and right triangle trigonometry. Emphasis will be on the application of skills to technical problems. Successful completion of College Technical Mathematics 1A and College Technical Mathematics 1B is the equivalent of College Technical Mathematics 1.

464 - Maintenance Technician Apprentice

50413501 Maintenance Technician Related 1 (2 cr.)	Focuses on maintaining a safe work environment, basic math, physics.
50413502 Maintenance Technician Related 2 (2 cr.)	Focuses on alternating current, print reading, and National Electrical Code.
50413503 Maintenance Technician	Focuses on National Electrical Code and motor controls.

Course Descriptions

**50413504 Maintenance Technician
Related 4 (2 cr.)**

Focuses on electrical alternating and direct current motors and transformers.

50413507 Maintenance Technician

Focuses on solid state electronics and variable speed drives.

50413508 Maintenance Technician

Focuses on PLC's (programmable logic controllers).

50419508 Maintenance Technician

Related 11 (2 cr.)

Provides an introduction to the theories involved in fluid power transmission and includes the relationships of flow and volume to speed of operation. Focuses on safety and operation of hydraulic and pneumatic equipment. Students will learn to read schematics and blueprints with the opportunity to build and test common circuits.

50423512 Maintenance Technician

Related 12 (1 cr.)

Provides students with the understanding and application of preventive and predictive maintenance. Examines breakdown maintenance, scheduled maintenance, and predictive types of maintenance. Demonstrates the advantages as well as the disadvantages of these programs. The importance of managing documentation is also included.

50423535 Maintenance Technician

Related 5 (2 cr.)

Focuses on maintaining a safe work environment, print reading, mechanical power transmission, precision measurement, bearings and belts.

50423536 Maintenance Technician

Related 6 (2 cr.)

Focuses on equipment installation, pumps and compressors, and alignment.

50423539 Maintenance Technician

Related 9 (2 cr.)

Focuses on couplings, conveyors, gears and gear boxes, and gear assemblies.

50423550 Maintenance Technician

Related 10 (2 cr.)

Focuses on proper installation and maintenance of pumps and compressors. Identify couplings and their applications, including alignment techniques and their related accuracy.

50442542 Apprenticeship Related

Welding (1 cr.)

Focuses on the basic concepts of Shielded Metal Arc Welding, Gas Metal Arc Welding, and Gas Tungsten Arc Welding processes. Students will learn welding theory as well as how to set up and operate these welding processes and complete labs with proficiency. Troubleshooting, along with specific job applications will be covered with these welding processes.

476 - Construction Trades Pipe Trade Fundamentals

**31476301 Introduction to Pipe Trades
Careers (3 cr.)**

Introduces the plumbing, steamfitting, sprinkler fitting, and HVAC piping trades. Explores trade terminology and component identification necessary to meet the basic skills in the pipe trade industry.

31476304 Piping Systems (3 cr.)

Introduces piping systems and piping systems maintenance. Provides an overview of piping systems, metal piping, nonmetallic piping, tubing, hoses, common valves, special valves, strainers, filters and traps, and piping accessories.

**31476305 Pipe Joining Processes (3
cr.)**

Introduces students to the tools and skills required to join plastic and copper piping systems using sweating, brazing, solvent welding. Also covers various PEX joining methods.

476 - Construction Trades Pipe Trades Preparation

Course Descriptions

10442120 Related Welding (1 cr.)	Prepares students with the common techniques and procedures for SMAW, GMAW, GTAW, and FCAW welding in a repair or machine shop environment. Topics include welding metal, cutting metal with plasma and oxy-fuel, and metal identification. Laboratory activities will provide the student with hands-on practice.
10449180 Construction Trades Safety (2 cr.)	Teaches skills to recognize, evaluate and control construction site hazards. Includes personal protective equipment and how to perform construction tasks safely. Describes hazards of work and basic approaches to working safely. Introduces OSHA-mandated Lockout/Tagout procedures and prepares learners for additional detailed safety training. Upon successful completion, the student will receive a Department of Labor OSHA Construction Safety and Health 30-hour completion card.
10531101 First Aid/CPR, Principles and Practices (1 cr.)	Presents and evaluates basic first aid skills necessary to care for the ill and injured until medical help arrives. Covers the use of an Automated External Defibrillator (AED), as well as CPR for all ages and the recognition and care of cardiac emergencies. Students receive an AHA Healthcare CPR card and a FVTC First Aid certificate upon course completion.
10606161 Introduction to AutoCAD (2 cr.)	Covers the very basics of AutoCAD - introduction to the user interface, basic drawing commands, basic editing commands, and basic viewing commands for making two dimensional (2D) drawings. Layer management, object properties, extracting information from the drawing, plotting and layouts, advanced annotation, creating and modifying blocks are covered. This course will give the student a comfort level for working within the AutoCAD environment and the knowledge needed for more advanced CAD courses offered within the various degree programs.
10890100 College Success: On Course (1 cr.)	On Course helps you learn a number of proven strategies for creating greater academic, professional and personal success. You will discover how to create a rich, fulfilling life by developing new beliefs and behaviors. College Success: On Course empowers you to make wise choices in your academic and personal life which leads to improved experiences and outcomes.
31462301 Rigging & Lifting, Const & Ind Related (1 cr.)	Instructs in the proper use and inspection of hand rigging (chains and hoists) and power rigging (using cranes and special lifting equipment). The safe use and handling of wire and fiber ropes, chains, and rigging hardware are emphasized. Includes classroom and lab activities.
31476301 Introduction to Pipe Trades Careers (3 cr.)	Introduces the plumbing, steamfitting, sprinkler fitting, and HVAC piping trades. Explores trade terminology and component identification necessary to meet the basic skills in the pipe trade industry.

Course Descriptions

31476302 Pipe Trades Print Reading (2 cr.)	Introduces the skills required for individuals to read and interpret residential and commercial pipe trades drawings. The information and symbology on plumbing, steamfitting, and other pipe trades' drawings will be covered.
31476304 Piping Systems (3 cr.)	Introduces piping systems and piping systems maintenance. Provides an overview of piping systems, metal piping, nonmetallic piping, tubing, hoses, common valves, special valves, strainers, filters and traps, and piping accessories.
31476305 Pipe Joining Processes (3 cr.)	Introduces students to the tools and skills required to join plastic and copper piping systems using sweating, brazing, solvent welding. Also covers various PEX joining methods.
31476307 Pipe Trades Green Environment (1 cr.)	Covers the impacts of the built environment on the green environment. It introduces methods to reduce the impact on the environment and explains how it applies to the pipe trades.
31801318 Communication, Applied (2 cr.)	Focuses on technical vocabulary, business writing, job search strategies, interpersonal communication and oral presentation skills through individual and group activities. Open enrollment for all students. It is recommended, but not required, that the student have basic computer skills, HS GPA 2.75+ OR ACPL Read 54+/Sent 83+, Next Gen Read 250+/Sent 237+, ACT Read 18+/Engl 15+ OR Read Prep 10838105/Sent Prep 74851745 OR not pursuing a degree. Personal/professional development students who have not taken the ACCUPLACER test need to consult with their instructor during the first class.
31804307 Math for the Trades (2 cr.)	Focuses on the math skills needed for various trades. Topics include arithmetic fundamentals, percent and proportion applications, the metric system, conversions, practical geometry, measurement applications, signed numbers and formula evaluation. Micrometer, equation solving and standard rule measurement units are included as needed. Scientific calculator use is introduced as needed.
31890307 Workplace Reality (2 cr.)	Focuses on developing skills in interpersonal communication, teamwork and meeting practical workplace requirements. Topics include quality control, team building, statistical process control, report writing, interview and report writing skills, diversity, problem solving, conflict resolution and OSHA requirements.

476 - Construction Trades Pipe Trades Principles

Course Descriptions

10449180 Construction Trades Safety (2 cr.)	Teaches skills to recognize, evaluate and control construction site hazards. Includes personal protective equipment and how to perform construction tasks safely. Describes hazards of work and basic approaches to working safely. Introduces OSHA-mandated Lockout/Tagout procedures and prepares learners for additional detailed safety training. Upon successful completion, the student will receive a Department of Labor OSHA Construction Safety and Health 30-hour completion card.
31476301 Introduction to Pipe Trades Careers (3 cr.)	Introduces the plumbing, steamfitting, sprinkler fitting, and HVAC piping trades. Explores trade terminology and component identification necessary to meet the basic skills in the pipe trade industry.
31476305 Pipe Joining Processes (3 cr.)	Introduces students to the tools and skills required to join plastic and copper piping systems using sweating, brazing, solvent welding. Also covers various PEX joining methods.
482 - Renewable Wind Energy Technology - Shared with LTC; LTC	
10449188 Essentials of Manufacturing Safety (1 cr.)	Provides information on the safety responsibilities of workers within the manufacturing industry. Special emphasis will be placed on common hazards and methods of controls.
10620111 Pneumatics 1 (1 cr.)	Provides an introduction to fundamental principles and laws of fluid power, with a focus on pneumatics. Laboratory activities are performed to verify the theory.
10620112 Pneumatics 2 (1 cr.)	Introduces advanced pneumatic and electropneumatic systems. Students examine how pneumatic components operate and how they interact in industrial systems. Laboratory activities are performed to verify the theory.
10620113 Hydraulics 1 (1 cr.)	Provides an introduction to fundamental principles and laws of fluid power, with a focus on hydraulics. Laboratory activities are performed to verify the theory.
10620114 Hydraulics 2 (1 cr.)	Introduces advanced hydraulic and electrohydraulic systems. Students examine how hydraulic components operate and how they interact in industrial systems. Laboratory activities are performed to verify the theory.
10620142 Motors and Drives 2 (1 cr.)	Introduces AC Generators, Three Phase, and Single Phase motors. Starting methods for AC motors, including AC Drives, will be introduced. Control wiring and reversing circuits will also be introduced. Students will wire for Synchronous and Induction motor operation.
10620148 Motors and Drives 1 (1 cr.)	Introduces DC motors and generators, along with DC Drives. Students will wire both separately-excited and self-excited DC generators. Counter Electromotive Force (CEMF) will be used to explain the operational principles of DC motors and generators. Various DC motor types will be introduced. Motor types include series, shunt, and compound motors.

Course Descriptions

10620164 Elements of Machines 1 (1 cr.)	Emphasizes the mechanical elements of industrial machines. Principles of leveling motors, fasteners, bearings, and couplings are covered. Terminology, selection, and proper installation and maintenance are stressed.
10620165 Elements of Machines 2 (1 cr.)	Emphasizes the mechanical elements of industrial machines. Principles of power transmission, belt drives, and chain drives are covered. Terminology, selection, and proper installation and maintenance are stressed.
10620187 Sensors (1 cr.)	Covers various types of sensors used in industrial operations such as inductive and capacitive proximity detectors, Hall-effect devices and various optical sensing modes. Laboratory activities are performed to verify the theory.
10620188 System Troubleshooting (1 cr.)	Develops troubleshooting skills by using several closed-loop systems on a level and flow process trainer. Students identify faults electrically inserted into this trainer by recognizing symptoms, creating and using flow charts for analysis, and finding the problem with test instruments.
10620189 Electromechanical Systems 1 (1 cr.)	Capstone course that uses the competencies learned throughout the Electromechanical program to operate various systems that interface with each other such as digital, servomechanisms, electro-hydraulic and gear mechanisms. Laboratory activities are performed to verify the theory.
10620190 Advanced AC/DC Variable Speed Drives (1 cr.)	Covers graphical programming and various communication techniques of current and vector drives. A multifunctional trainer is configured to demonstrate complex master/slave drive functions, on-line monitoring of drive performance, and to build troubleshooting skills.
10628151 PLC 1 (1 cr.)	Introduces Programmable Logic Controllers (PLC)s and RSLogix 500 Programming Software. The PLC hardware will consist of Allen Bradley products. Students use the RSLogix 500 programming software to create logical solutions for real world applications. The applications will require students to create, download, and debug programs in RSLogix 500.
10628152 PLC 2 (1 cr.)	Introduces Programmable Logic Controllers (PLC)s and Studio 5000 (formerly RSLogix5000) Programming Software. The PLC hardware will consist of Allen Bradley products. Students will configure Ethernet communications to connect to the Allen Bradley PLC hardware. Students will use Studio 5000 programming software to create logical solutions for real world applications. The applications will require students to create, download, and debug their programs. Students will study industrial sensors and their uses. Students will wire and test sensor operations.

Course Descriptions

10628153 PLC 3 (1 cr.)	Continues using the Allen Bradley PLC hardware platform with Studio 5000 programming software. Introduces Analog I/O and scaling for program interfacing. Scaling with math instructions, data handling with FIFO/LIFO instructions, and sequencer SQI/SQO instructions are all introduced.
10660110 DC Circuits 1 (1 cr.)	Introduces electrical safety and program procedures. The course covers Ohm's Law, power law, series circuits, and voltmeter, ammeter and ohmmeter applications. Number powers, electronic notations, circuit component recognition and diagrams, resistor power ratings, color code, Kirchhoff's voltage law and atomic structure are also included.
10660111 DC Circuits 2 (1 cr.)	Covers basic parallel and series-parallel circuits and their properties. Examines the theory, application and design of series-parallel circuits, such as loaded and unloaded voltage dividers and the Wheatstone bridge. Laboratory activities are performed to verify the theory.
10660112 DC Circuits 3 (1 cr.)	Covers capacitors and inductors including time constants and instantaneous voltage and current values of RC and RL circuits. Applications and various types of capacitors and inductors are discussed. Magnetism, electromagnetism, and devices, such as relays and solenoids, are also presented. Laboratory activities are performed to verify the theory.
10660114 AC Circuits 1 (1 cr.)	Covers AC waveforms and different voltage values including Peak, RMS, Average and Peak to Peak. The operation of transformers is also included. Laboratory activities using the oscilloscope are performed to verify the theory.
10660128 Semiconductors 1 (1 cr.)	Introduces semiconductor materials, the operation of diodes, Zener diodes and the construction of rectifier and filter circuits. Fundamental transistor construction and operation is also introduced. Laboratory experiments are performed to verify the theory.
10660170 Ladder Logic & Control Devices (1 cr.)	Introduces hardwired components found in industrial applications used to control simple circuits. Students will learn about switches, relays, contactors, timers, and indicator lamps. Students will use their knowledge of these devices to wire various circuits. Students will use ladder logic diagrams to interconnect and label devices to make complete circuits.
10660991 Elective: Electronics	Elective: Electronics Foundation
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.

Course Descriptions

10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
10804113 College Technical Math 1A (3 cr.)	Topics include: solving linear equations; graphing; percent; proportions; measurement systems; computational geometry; and right triangle trigonometry. Emphasis will be on the application of skills to technical problems. Successful completion of College Technical Mathematics 1A and College Technical Mathematics 1B is the equivalent of College Technical Mathematics 1.
10809195 Economics (3 cr.)	This course is designed to give an overview of microeconomics, macroeconomics, and international economics. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues.
10809199 Psychology of Human Relations (3 cr.)	Explores the relationship between the general principles of psychology and our everyday lives. Students are given the opportunity to achieve a deepened sense of awareness of themselves and others. This understanding enables students to improve their relationships with others at work, in the family, and in society.
486 - Airframe & Aircraft Aircraft Electronics	
10486100 Aircraft Fundamentals (2 cr.)	Explore the principles of flight and the basic design of aircraft. Introduces students to the nomenclature, history, and configuration of aircraft. Students will also learn about the theory of flight, aerodynamics, and basic meteorological concepts.
10486101 Aviation Records, Regulations & Publications (3 cr.)	Introduces the student to the Code of Federal Regulations that govern U.S. civil aviation. Generate various aircraft maintenance records that document: repairs, alterations, weight and balance changes, life-limited parts, and inspection status. Students will also study how various manufactures'™ documents are used in the maintenance of aircraft.
10486102 Aircraft Materials & Hardware (2 cr.)	Introduces the materials, hardware, and processes used to maintain aircraft. Students practice the proper use of hand and power tools. Students will also demonstrate the proper installation, torquing, and securing of fasteners. Students will fabricate rigid fluid lines and flexible hoses.
10486103 Aircraft Corrosion Control (2 cr.)	Apply the principles of corrosion control in the preservation of aircraft. Introduces the student to the different forms, causes, removal, and prevention of corrosion. Students will have the opportunity to also identify, inspect, and apply surface finishing materials to aircraft structures.

Course Descriptions

10486104 Inspection Fundamentals (1 cr.)	Inspect aircraft and components to determine airworthiness. Introduces the student to visual, dimensional, and non-destructive inspection techniques. Use precision measuring equipment and perform magnetic particle, dye penetrant, eddy current, and ultrasonic tests to identify defective parts.
10486105 Ground Handling & Servicing (1 cr.)	Prepares the student to operate in the maintenance environment by covering ramp safety, ground operations, preflight, engine runs, and aircraft servicing.
10486114 Avionics Communications (3 cr.)	Studies integrated communication systems used in various aviation aircraft. Very High Frequency Communication, High Frequency Communication, Ultra High Frequency Communication, Audio Control, Selective Calling, Satellite Communications and Transmitter systems are emphasized. Class provides in-depth, hands-on training in identifying, isolating, repairing and calibrating avionics communication systems.
10486120 Avionics Fundamentals (2 cr.)	Introduces the student to the operation and use of various communication and navigation systems used by flight crews as they travel around the globe. Learn how a combination of ground, air, and satellite-based stations are used by aircraft to coordinate traffic and avoid mishaps as they deal with changing weather conditions. Students will also use test equipment to evaluate proper systems operation.
10486121 Airframe Instrumentation (2 cr.)	Introduces the operating principles used by aircraft instruments to detect and display information about the flight environment and aircraft's performance. Prepares students to work with pressure, gyroscopic, and directional instrumentation. Electronic flight instruments, centralized aircraft monitoring, and crew alerting systems will also be explored.
10486122 Airframe Electrical Power (2 cr.)	Learn how to maintain aircraft electrical systems. Component operation, power sources, and power distribution will be studied. Students will have the opportunity to install, terminate, and repair electrical wiring. Troubleshooting, repair, and maintenance of switches, relays, circuit protective devices, and electric motors is also covered.
10486125 Aircraft Metallic Structures (2 cr.)	Apply the different techniques used to inspect, maintain, and repair metallic structures. Students will be able to practice designing, bending, forming, and installing sheet metal repairs. Installation of antennas and other avionics equipment will be covered.
10486126 Airframe Fuel Systems (1 cr.)	Inspect, troubleshoot, and repair fuel systems onboard the aircraft. Students will explore different fuel types, storage, distribution, and quantity indication sub-systems used in aviation.

Course Descriptions

10486127 Aircraft Technical Drawings (1 cr.)	Interpret aircraft blueprints, charts, and graphs. Students will identify symbols, lines, and terminology used in aircraft applications. Students will sketch repairs and alterations made to aircraft.
10486140 Avionics Control Systems (2 cr.)	Studies the operation of air data, flight director, autopilot, altitude and heading reference systems. Examines the integration of these systems and the control of the aircraft in flight. Aircraft control surfaces and information sources used to fly the aircraft are emphasized. Teaches practical application of servo, synchro slaved compass systems, flight director and autopilot systems.
10486141 Powerplant Instrumentation (1 cr.)	Introduces operating principles and use of engine instruments to detect and display engine performance data. Students will study the operation and use of mechanical and electronic systems for engine indicator and crew alerting systems. Maintenance, inspection, and troubleshooting of engine instrument systems and components will be covered.
10486142 Powerplant Electrical Power (1 cr.)	Learn how the engine is used to supply electrical power to the aircraft. Students will study the operation of power generation and starter circuits. Practice maintaining alternators, generators, starter motors, and other electrical components on the powerplant.
10486143 Avionics Surveillance Systems (3 cr.)	Studies integrated surveillance avionics systems in various aviation aircraft. Transponders, Traffic Alert and Collision Avoidance, Enhanced Ground Proximity Warning, and Weather Radar systems are studied. Class focuses on understanding each system's operation and use by the flight crew. Identifying, isolating, repairing and calibrating the systems, within the guidelines established by the manufacturer, are emphasized.
10486168 Human Factors (1 cr.)	Introduces maintenance resource management issues. The study of airline safety, human error in maintenance, human factors fundamentals, worker safety, communication, team work, situation awareness, and performance management.
10486169 Avionics Navigational Systems (3 cr.)	Studies integrated navigational avionics systems used in various aviation aircraft. VHF Omni directional Range, Instrument Landing Systems, Marker Beacon, Global Positioning System and Distance Measuring Equipment are emphasized. Class provides in-depth, hands-on training in identifying, isolating, repairing and calibrating avionics systems.
10660110 DC Circuits 1 (1 cr.)	Introduces electrical safety and program procedures. The course covers Ohm's Law, power law, series circuits, and voltmeter, ammeter and ohmmeter applications. Number powers, electronic notations, circuit component recognition and diagrams, resistor power ratings, color code, Kirchhoff's voltage law and atomic structure are also included.

Course Descriptions

10660111 DC Circuits 2 (1 cr.)	Covers basic parallel and series-parallel circuits and their properties. Examines the theory, application and design of series-parallel circuits, such as loaded and unloaded voltage dividers and the Wheatstone bridge. Laboratory activities are performed to verify the theory.
10660112 DC Circuits 3 (1 cr.)	Covers capacitors and inductors including time constants and instantaneous voltage and current values of RC and RL circuits. Applications and various types of capacitors and inductors are discussed. Magnetism, electromagnetism, and devices, such as relays and solenoids, are also presented. Laboratory activities are performed to verify the theory.
10660114 AC Circuits 1 (1 cr.)	Covers AC waveforms and different voltage values including Peak, RMS, Average and Peak to Peak. The operation of transformers is also included. Laboratory activities using the oscilloscope are performed to verify the theory.
10660115 AC Circuits 2 (1 cr.)	Covers reactive properties of series and parallel RC, RL and RLC circuits. Topics include reactance, phase angle and fundamental AC power concepts such as power triangle and power factor. Circuit quantities are determined using triangular analysis. Laboratory activities are performed to verify the theory.
10660128 Semiconductors 1 (1 cr.)	Introduces semiconductor materials, the operation of diodes, Zener diodes and the construction of rectifier and filter circuits. Fundamental transistor construction and operation is also introduced. Laboratory experiments are performed to verify the theory.
10660129 Semiconductors 2 (1 cr.)	Introduces students to transistor operation as a switch, SCR, Triac, and Operational Amplifier operation and application.
10660130 Digital Electronics Tech 1 (1 cr.)	Introduces digital electronics, the operation of logic gates, and the theory of combination logic devices such as encoders, decoders, multiplexers, binary adders and parity circuits. Laboratory activities are performed to verify the theory.
10660131 Digital Electronics Tech 2 (1 cr.)	Examines flip-flops, various types of shift registers and counters, arithmetic circuits, and practical application digital devices. Laboratory activities are performed to verify the theory.
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.

Course Descriptions

10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
10804113 College Technical Math 1A (3 cr.)	Topics include: solving linear equations; graphing; percent; proportions; measurement systems; computational geometry; and right triangle trigonometry. Emphasis will be on the application of skills to technical problems. Successful completion of College Technical Mathematics 1A and College Technical Mathematics 1B is the equivalent of College Technical Mathematics 1.
10806139 Survey of Physics (3 cr.)	This course emphasizes understanding basic physics concepts through laboratory investigation and applications. Topics include kinematics, dynamics, work, energy, power, temperature, heat, waves, electricity, magnetism, electromagnetic waves, optics, and atomic and nuclear physics.
10809195 Economics (3 cr.)	This course is designed to give an overview of microeconomics, macroeconomics, and international economics. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues.
10809198 Intro to Psychology (3 cr.)	This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.
486 - Airframe & Aircraft Airframe & Powerplant Mechanics	
10486100 Aircraft Fundamentals (2 cr.)	Explore the principles of flight and the basic design of aircraft. Introduces students to the nomenclature, history, and configuration of aircraft. Students will also learn about the theory of flight, aerodynamics, and basic meteorological concepts.
10486101 Aviation Records, Regulations & Publications (3 cr.)	Introduces the student to the Code of Federal Regulations that govern U.S. civil aviation. Generate various aircraft maintenance records that document: repairs, alterations, weight and balance changes, life-limited parts, and inspection status. Students will also study how various manufacturers'™ documents are used in the maintenance of aircraft.

Course Descriptions

10486102 Aircraft Materials & Hardware (2 cr.)	Introduces the materials, hardware, and processes used to maintain aircraft. Students practice the proper use of hand and power tools. Students will also demonstrate the proper installation, torquing, and securing of fasteners. Students will fabricate rigid fluid lines and flexible hoses.
10486103 Aircraft Corrosion Control (2 cr.)	Apply the principles of corrosion control in the preservation of aircraft. Introduces the student to the different forms, causes, removal, and prevention of corrosion. Students will have the opportunity to also identify, inspect, and apply surface finishing materials to aircraft structures.
10486104 Inspection Fundamentals (1 cr.)	Inspect aircraft and components to determine airworthiness. Introduces the student to visual, dimensional, and non-destructive inspection techniques. Use precision measuring equipment and perform magnetic particle, dye penetrant, eddy current, and ultrasonic tests to identify defective parts.
10486105 Ground Handling & Servicing (1 cr.)	Prepares the student to operate in the maintenance environment by covering ramp safety, ground operations, preflight, engine runs, and aircraft servicing.
10486120 Avionics Fundamentals (2 cr.)	Introduces the student to the operation and use of various communication and navigation systems used by flight crews as they travel around the globe. Learn how a combination of ground, air, and satellite-based stations are used by aircraft to coordinate traffic and avoid mishaps as they deal with changing weather conditions. Students will also use test equipment to evaluate proper systems operation.
10486121 Airframe Instrumentation (2 cr.)	Introduces the operating principles used by aircraft instruments to detect and display information about the flight environment and aircraft's performance. Prepares students to work with pressure, gyroscopic, and directional instrumentation. Electronic flight instruments, centralized aircraft monitoring, and crew alerting systems will also be explored.
10486122 Airframe Electrical Power (2 cr.)	Learn how to maintain aircraft electrical systems. Component operation, power sources, and power distribution will be studied. Students will have the opportunity to install, terminate, and repair electrical wiring. Troubleshooting, repair, and maintenance of switches, relays, circuit protective devices, and electric motors is also covered.
10486125 Aircraft Metallic Structures (2 cr.)	Apply the different techniques used to inspect, maintain, and repair metallic structures. Students will be able to practice designing, bending, forming, and installing sheet metal repairs. Installation of antennas and other avionics equipment will be covered.
10486126 Airframe Fuel Systems (1 cr.)	Inspect, troubleshoot, and repair fuel systems onboard the aircraft. Students will explore different fuel types, storage, distribution, and quantity indication sub-systems used in aviation.

Course Descriptions

10486127 Aircraft Technical Drawings (1 cr.)	Interpret aircraft blueprints, charts, and graphs. Students will identify symbols, lines, and terminology used in aircraft applications. Students will sketch repairs and alterations made to aircraft.
10486141 Powerplant Instrumentation (1 cr.)	Introduces operating principles and use of engine instruments to detect and display engine performance data. Students will study the operation and use of mechanical and electronic systems for engine indicator and crew alerting systems. Maintenance, inspection, and troubleshooting of engine instrument systems and components will be covered.
10486142 Powerplant Electrical Power (1 cr.)	Learn how the engine is used to supply electrical power to the aircraft. Students will study the operation of power generation and starter circuits. Practice maintaining alternators, generators, starter motors, and other electrical components on the powerplant.
10486168 Human Factors (1 cr.)	Introduces maintenance resource management issues. The study of airline safety, human error in maintenance, human factors fundamentals, worker safety, communication, team work, situation awareness, and performance management.
10660110 DC Circuits 1 (1 cr.)	Introduces electrical safety and program procedures. The course covers Ohm's Law, power law, series circuits, and voltmeter, ammeter and ohmmeter applications. Number powers, electronic notations, circuit component recognition and diagrams, resistor power ratings, color code, Kirchhoff's voltage law and atomic structure are also included.
10660111 DC Circuits 2 (1 cr.)	Covers basic parallel and series-parallel circuits and their properties. Examines the theory, application and design of series-parallel circuits, such as loaded and unloaded voltage dividers and the Wheatstone bridge. Laboratory activities are performed to verify the theory.
10660112 DC Circuits 3 (1 cr.)	Covers capacitors and inductors including time constants and instantaneous voltage and current values of RC and RL circuits. Applications and various types of capacitors and inductors are discussed. Magnetism, electromagnetism, and devices, such as relays and solenoids, are also presented. Laboratory activities are performed to verify the theory.
10660114 AC Circuits 1 (1 cr.)	Covers AC waveforms and different voltage values including Peak, RMS, Average and Peak to Peak. The operation of transformers is also included. Laboratory activities using the oscilloscope are performed to verify the theory.
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.

Course Descriptions

10804113 College Technical Math 1A (3 cr.)	Topics include: solving linear equations; graphing; percent; proportions; measurement systems; computational geometry; and right triangle trigonometry. Emphasis will be on the application of skills to technical problems. Successful completion of College Technical Mathematics 1A and College Technical Mathematics 1B is the equivalent of College Technical Mathematics 1.
10806139 Survey of Physics (3 cr.)	This course emphasizes understanding basic physics concepts through laboratory investigation and applications. Topics include kinematics, dynamics, work, energy, power, temperature, heat, waves, electricity, magnetism, electromagnetic waves, optics, and atomic and nuclear physics.
32486330 Aircraft Cabin & Environmental Systems (1 cr.)	Ensure the comfort and safety of passengers and pilots alike. Students will study how supplemental oxygen, cabin pressurization, and climate control systems allow for high altitude operations. Introduces students to the importance of maintaining potable drinking water and waste storage systems in creating a clean cabin environment.
32486332 Airframe Protection Systems (2 cr.)	Keep fire and ice from cutting a flight short. Students will study the operation, inspection, troubleshooting, and repair of airframe fire detection and extinguishing systems. Students will be introduced to how ice is detected, prevented, and removed from the airframe and the proper maintenance of these systems.
32486334 Aircraft Non-metallic Structures (2 cr.)	From wood to carbon fiber, students will explore the different non-metallic structural materials used to construct aircraft. Students will repair composite structures using the vacuum bagging process. Sew a fabric covering and dope it on a wing mockup. Learn how to install, clean, and repair transparent plastics used in windows and windshields.
32486335 Aircraft Hydraulics & Pneumatics (2 cr.)	Prepares students to maintain fluid power systems. Students will learn the operating principles, design, and components used in aircraft hydraulic and pneumatic systems. Ensure airworthiness through the inspection, troubleshooting, and repair of hydraulic and pneumatic systems.
32486336 Aircraft Landing Gear (2 cr.)	Service, inspect, troubleshoot, and repair aircraft landing gear systems. Students will explore the different configurations and components that make up landing gear systems. Wheels, tires, brakes, shock absorption and gear retraction are covered.
32486338 Aircraft Flight Controls (1 cr.)	Apply concepts of aerodynamics and how to control an aircraft by adjusting the flight control system. Students will balance and adjust primary flight controls. The inspection and repair of control cables and associated systems will be introduced. This includes flight controls on both fixed wing aircraft and rotorcraft.

Course Descriptions

32486339 Propellers (2 cr.)	Explains the construction and operating principles of propellers and propeller systems. Federal Aviation Administration regulations and manufacturers' specifications relating to the installation, inspection and maintenance of propellers and their systems are addressed.
32486340 Airframe Inspections (1 cr.)	Inspect an airframe to determine airworthiness. Students will research maintenance records, perform required inspections, and ensure the aircraft's configuration conforms to approved documentation.
32486341 Turbine Engines (2 cr.)	Introduces students to the theory and design that makes turbine engines unique. Students will have the opportunity to perform different inspection, servicing, and troubleshooting tasks. The uses of special test equipment and proper operating procedures are also covered.
32486342 Turbine Systems 1 (2 cr.)	Examine how several sub-systems ensure the safe operation of turbine engines. Students will learn about engine cooling, ignition, and lubrication systems. The safe operation, maintenance, inspection and troubleshooting of these systems are covered.
32486343 Turbine Systems 2 (1 cr.)	Examine how intake and exhaust systems affect turbine performance. Students will study how these systems are designed to optimize airflow, suppress noise, and provide reverse thrust. The maintenance, inspection, and troubleshooting of components and systems is covered.
32486344 Powerplant Inspections (1 cr.)	Inspect a powerplant to determine airworthiness. Students will research maintenance records, perform required inspections, and ensure the engine's configuration and performance conforms to approved documentation.
32486345 Reciprocating Engines (2 cr.)	Learn how a reciprocating piston engine operates. Apply the theory of operation while running and evaluating an engine. Students will have the opportunity to disassemble, clean, inspect, repair and reassemble an aircraft engine.
32486346 Reciprocating Systems 1 (1 cr.)	Explore the sub-systems needed to ensure an engine runs reliably and efficiently. Students will learn how the induction, exhaust, cooling, and lubrication systems affect engine operation and service life.
32486347 Reciprocating Systems 2 (2 cr.)	Examine the different ways precise timing of the ignition event is accomplished in aircraft engines. Students will study how aircraft magnetos, spark plugs, and auxiliary systems work together to ensure operation. Students will have the opportunity to troubleshoot, adjust, and service aircraft ignition systems.

Course Descriptions

- 32486348 Powerplant Fuel Metering (2 cr.)** Examine how the fuel/air ratio must be maintained to get the most out of an engine. Students will study how reciprocating engines use float carburetors, pressure carburetors, or fuel injectors to control the rate at which fuel is burned. Turbine engine fuel systems are also covered. Students will have the opportunity to install, adjust, troubleshoot, and repair fuel metering systems.
- 32486349 Powerplant Protection Systems (1 cr.)** Protect the engine from the hazards of fire and ice. Students will study the operation, inspection, troubleshooting, and repair of powerplant fire detection and extinguishing systems. Students will be introduced to how ice affects engine performance, how engines are designed to remedy these hazards and the maintenance of these systems.
- 499 - Technical Technical Studies-Journeyworker**
- 10499039 Journeyworker-Advanced Standing - 39 Credits (3 cr.)** Represents advanced standing for a Wisconsin Journeyworker Certificate of at least four hundred hours of instruction.
- 10801195 Written Communication (3 cr.)** Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
- 10801196 Oral/Interpersonal Comm (3 cr.)** Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
- 10804123 Math w Business Apps (3 cr.)** This course integrates algebraic concepts, proportions, percents, simple interest, compound interest, annuities, and basic statistics with business/consumer scenarios. It also applies math concepts to the purchasing/buying and selling processes.
- 10809195 Economics (3 cr.)** This course is designed to give an overview of microeconomics, macroeconomics, and international economics. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues.
- 10809198 Intro to Psychology (3 cr.)** This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.

Course Descriptions

10502101 Aesthetic Spa Services 1 - Beginner (2 cr.)	Introduces students to working on clients in a spa setting. Students schedule appointments, consult with clients, analyze various skin types, perform facial treatments including hair removal. Students incorporate the use of facial machines during treatments. Students recommend products and perform makeup applications.
10502102 Aesthetic Spa Services 2 - Intermediate (2 cr.)	Build customer service skills in a spa setting. Schedule appointments, perform client consultations, analyze various skin types and perform facial treatments. Students continue to recommend products and perform makeup applications and hair removal. Students also learn the fundamental skills required for lawful and effective salon practice and management, including Wisconsin state laws and regulatory rules. Students will start a business plan and learn basic job seeking skills.
10502104 Aesthetic Treatments (3 cr.)	Build on previous skills and knowledge to perform advanced techniques such as deep cleansing galvanic facials, extractions, high frequency, microdermabrasion and chemical exfoliation. Newer technologies including ultrasonic spatulas, dermafiles and microcurrent also are introduced.
10502105 Aesthetician Mock Board Prep and Assessment (1 cr.)	Prepares students for their State Board Licensing Exam. State curriculum and administrative code is examined and discussed. Students also identify the limitations of their license as it relates to the medical field.
10502108 Facial Treatments (3 cr.)	Explore the theory and practical skills of facials. Study basic anatomy and physiology of the body, skin types and conditions. Learn to perform beginning skin analysis and consultations skills. Study cosmetic chemistry principles and apply skin care products and treatments. Master basic facial massage manipulation and treatment room set up.
10502109 Hair Removal Techniques (1 cr.)	Study theory and practice hair removal techniques for both men and women. Learn how to remove hair from the face, underarms, legs, bikini and back by performing services on models, and understand contraindications to hair removal for clients.
10502110 Make-up Techniques (1 cr.)	Discover makeup theory and the law of color while performing basic, special occasion, and theatrical makeup applications on mannequins, peers, and models. Students learn to use proper infection control procedures to prevent the spread of disease. Students explore the state board basic competency requirements for makeup on mannequins.
10502111 Aesthetic Theory (1 cr.)	Apply infection control practices to keep the spa and medical setting clean and customers safe. Study Wisconsin Statutes and Administrative Codes relating to safety and sanitation in a variety of Aesthetic settings. Discuss the differences in spa ecology practices between spa and medical settings, including the disposal of medical waste.

Course Descriptions

10502123 Aesthetic Spa Services 3 - Advanced (2 cr.)

Provide aesthetic services to guests in a spa setting, including deep cleansing galvanic current, light therapy, microdermabrasion, and chemical exfoliation along with extractions. Students begin body treatments, scrubs and wraps for health and wellness and learn about state board exam expectations. Students also learn the advanced skills required for salon management related to Wisconsin state laws. Students will complete a business plan and advance their job seeking skills.

10502156 Aesthetic Spa Sciences (2 cr.)

Introduces the science of aesthetic services including an introduction to electricity and anatomy. Discover life skills for success. Learn to describe the chemical composition of salon/spa products and determine the effects on the hair and skin. Apply sanitation practices to the salon/spa setting.

502 - Barbering Apprentice

50502550 Barber Hair Care and Services for Women (2 cr.)

Gain fundamental knowledge on hair care and develops skills required during draping, shampooing, and scalp massage procedures. In addition, the course examines the phases of hair growth, common hair disorders, causes and treatments for hair loss, and barber history. The final portion of the course explores women's haircutting and hairstyling guidelines established by the Wisconsin Statutes and Administrative Codes for barbers.

50502551 Barber Development and Services for Men (2 cr.)

Examine diseases and disorders of the skin, shaving, men's facials, and men's hair cutting/styling as mandated by the Wisconsin Statutes and Administrative Codes for barbers. In addition, the course examines opportunities for lifelong learning and professional development.

50502552 Barber Laws, Sanitation, and Science (2 cr.)

Examine the rules and regulations for barbers in Wisconsin. In addition, the course explores safety, sanitation, disinfection, and infection control practices and procedures that are common to all aspects of the barbershop and salon. Apprentices will also examine the theory and concepts surrounding general sciences, chemical relaxing, and permanent waving as mandated by the Wisconsin Statutes and Administrative Codes for barbers.

50502553 Barber Hair Color and Business Skills (2 cr.)

Examine the theory requirements for hair coloring and bleaching as mandated by the Wisconsin Statutes and Administrative Codes for barbers. In addition, apprentices will develop fundamental skills needed to understand and communicate with people. A review of the Wisconsin laws and administrative codes that govern state barbers will be covered.

502 - Cosmetology

Course Descriptions

31502301 Salon Theory and Ecology (2 cr.)	Learn theoretical concepts in microbiology and decontamination, general chemistry, micro-hair structure and anatomy as related to the profession. Sanitation and infection control practices will be taught to keep the salon clean and customers safe utilizing the Wisconsin Statutes and Administrative Codes relating to safety and sanitation in the salon.
31502302 Basic Cut and Style (4 cr.)	Utilize cutting techniques to develop a plan to achieve a desired haircut/style. Develop skills in wet and dry hairstyling to include using finger waves, pin curls, roller sets, curling and flattening the hair in conjunction to the cuts performed.
31502303 Basic Texture and Color (5 cr.)	Focuses on the chemicals used and the effects they have in restructuring the hair during permanent wave, chemical relaxing and hair color services. Practice the steps involved in a chemical service including safety procedures. Study the color wheel and the Law of Color. Identify the differences between different chemicals.
31502304 Salon Client Services 1 - Introductory (3 cr.)	Practice consultation and analysis skills in a salon atmosphere. Study how personality, teamwork and ethics contribute to both personal and professional success within the salon business. Provide services under the supervision of an instructor. Competencies will include nail services, cutting, styling, scalp treatments, hair coloring and chemical texturizing.
31502305 Advanced Cut and Style (4 cr.)	Perform men's haircuts including grooming techniques. Safety and infection control will be practiced throughout the course. Study the composition and construction of a variety of wigs and hairpieces including hair replacement. Full-service haircuts and styles will be performed; including trends in haircutting and styling.
31502306 Advanced Texture and Color (4 cr.)	Incorporate consultation and analytical skills to choose the best product and techniques to meet the needs of a client. Advanced texture and color techniques will be assessed. Observe and research trends and techniques in chemical service within a salon setting.
31502307 Facials and Skin Care (2 cr.)	Study the function, composition and structure of all types of skin. Basic competency will be met for hair removal services; facial service to include performance of a massage and makeup application following all safety and infection control guidelines. Study of advanced skin care.
31502308 Salon Business and Professional Development (1 cr.)	Develop a personal plan for success in the industry including a portfolio including a resume, cover letter, and other pictures to use when seeking employment. Computer work, marketing and professional observation will be included.
31502309 Salon Client Services 2 - Intermediate (3 cr.)	Provide services to salon guests under the direct supervision of an instructor. A full menu of services will be provided.

Course Descriptions

31502310 Salon Client Services 3 - Advanced (3 cr.)	Integrate the theory, practice and reflection of coursework by providing services to guests. Services will be offered based on the meeting the minimum competency requirements.
31502311 Cosmetology State Board Prep and Assessment (2 cr.)	Review all state board required procedures and exam guidelines. Practical and written assessment of all state board subjects. Prepare and submit materials for state board exams.
31502330 Salon Management Skills (2 cr.)	Introduces the fundamental skills required for lawful and effective salon practice and management, including Wisconsin state laws and regulatory rules.
31502374 Nails (2 cr.)	Study the structure, growth, diseases, disorders and conditions of the nail. Practice infection control procedures to protect the client and practitioner. Study the anatomy of the hand, arm, foot and leg to effectively apply massage techniques relating to nail services. Perform manicure and pedicure services to include polish application and massage techniques.
31502378 Cosmetology Sales & Marketing (1 cr.)	Review product lines to best prescribe beneficial products to meet the needs of each client. Practice successful sales techniques. Aspects of designing effective retail displays will be part of this course.

502 - Cosmetology Apprentice

50502750 Haircutting for Cosmetologists (0 cr.)	Student learn basic haircutting procedures to include disinfection and proper use of tools.
50502751 Cosmetology Laws and Rules (0 cr.)	Focuses on laws and rules affecting barber cosmetology in the State of Wisconsin.
50502752 Professional Development for Cosmetologists (0 cr.)	Examines the policies and responsibilities of the Cosmetology profession. Learners apply practices related to maintaining a healthy mind and body, and in determining personal qualities related to health and human relations. Also focuses on developing personal life management.
50502753 Cosmetology Salon Ecology (0 cr.)	Focuses on different types organisms to prevent the spread of disease in a salon environment. Students explore basic safety and first aid methods in the salon.
50502754 Hairstyling and Design for Cosmetologists (1 cr.)	Focus will be on styling the hair to include fingerwaving, pincurling, roller-setting, blow-drying, thermal curling, thermal pressing, braiding, and long hairstyling. Product knowledge will be discussed. Safety and sanitation will be addressed.
50502755 Cosmetology Hair and Scalp Care (0 cr.)	Develop skills that relate to the chemistry of shampooing and conditioning products to human hair. Students identify the anatomy of the cranium, shoulders, and back as they relate to hair and scalp treatments. Students will integrate State of Wisconsin Administrative Codes related to infection control. Students will determine skill required in preparation for a hair and scalp treatment to include consultation skills, draping techniques, and the performance of a shampoo and scalp treatment service.

Course Descriptions

50502756 Trichology for Cosmetology (0 cr.)	Focus will be on the structure of the hair root and hair shaft, including descriptions of the three layers of the hair. Discussion will include the chemical bonds that make up the hair and how the bonds are affected by the services performed in the salon. Hair and scalp disorders, diseases, and hair loss will be addressed.
50502757 Hair Coloring for Cosmetologists (1 cr.)	Focuses on the law of color, consultation skills, basic application techniques and formulation to safely and effectively perform a color service.
50502758 Chemical Texturizing for Cosmetologists (1 cr.)	Focuses on the theory of chemical texturizing and the application techniques and procedures related to permanent waving, chemical relaxing, and soft curl (curl reforming) permanent waves.
50502759 Cosmetology Salon Industry & Business Ops (0 cr.)	Introduces the student to all the responsibilities of owning a salon. Students develop a personal career-building plan incorporating a variety of areas to help them reach success in the profession.
50502760 Histology for the Skin for Cosmetology (0 cr.)	Explores the structure, composition, and related glands of the skin. Students also characterize skin disease and disorders as contagious or non-contagious to protect themselves and their clients.
50502761 Cosmetology Skin Care Services (1 cr.)	This course covers skin care services to include facials, waxing, delegated medical procedures, e.g. microdermabrasion, electricity/light therapy, anatomy.
50502762 Manicuring, Pedicuring and Artificial Nails (0 cr.)	Applies techniques for basic manicures and pedicures. Artificial nails will also be addressed.
50502763 Nail Structure and Related Disorders (0 cr.)	Explores the structure and composition of the nail, nail diseases, nail disorders and conditions and the anatomy of the hand and arm.
502 - Master Aesthetician	
10502101 Aesthetic Spa Services 1 - Beginner (2 cr.)	Introduces students to working on clients in a spa setting. Students schedule appointments, consult with clients, analyze various skin types, perform facial treatments including hair removal. Students incorporate the use of facial machines during treatments. Students recommend products and perform makeup applications.
10502102 Aesthetic Spa Services 2 - Intermediate (2 cr.)	Build customer service skills in a spa setting. Schedule appointments, perform client consultations, analyze various skin types and perform facial treatments. Students continue to recommend products and perform makeup applications and hair removal. Students also learn the fundamental skills required for lawful and effective salon practice and management, including Wisconsin state laws and regulatory rules. Students will start a business plan and learn basic job seeking skills.

Course Descriptions

10502104 Aesthetic Treatments (3 cr.)	Build on previous skills and knowledge to perform advanced techniques such as deep cleansing galvanic facials, extractions, high frequency, microdermabrasion and chemical exfoliation. Newer technologies including ultrasonic spatulas, dermafiles and microcurrent also are introduced.
10502105 Aesthetician Mock Board Prep and Assessment (1 cr.)	Prepares students for their State Board Licensing Exam.Â State curriculum and administrative code is examined and discussed. Students also identify the limitations of their license as it relates to the medical field.
10502107 Advanced Aesthetic Treatments and Massage (1 cr.)	Develop skills in a variety of spa treatments, including the use of stones for facial massages and lymphatic drainage and body treatments. Learn relaxing body massage, aromatherapy and reflexology to relieve tension and enhance the health and condition of the skin.
10502108 Facial Treatments (3 cr.)	Explore the theory and practical skills of facials. Study basic anatomy and physiology of the body, skin types and conditions. Learn to perform beginning skin analysis and consultations skills. Study cosmetic chemistry principles and apply skin care products and treatments. Master basic facial massage manipulation and treatment room set up.
10502109 Hair Removal Techniques (1 cr.)	Study theory and practice hair removal techniques for both men and women. Learn how to remove hair from the face, underarms, legs, bikini and back by performing services on models, and understand contraindications to hair removal for clients.
10502110 Make-up Techniques (1 cr.)	Discover makeup theory and the law of color while performing basic, special occasion, and theatrical makeup applications on mannequins, peers, and models. Students learn to use proper infection control procedures to prevent the spread of disease. Students explore the state board basic competency requirements for makeup on mannequins.
10502111 Aesthetic Theory (1 cr.)	Apply infection control practices to keep the spa and medical setting clean and customers safe. Study Wisconsin Statutes and Administrative Codes relating to safety and sanitation in a variety of Aesthetic settings. Discuss the differences in spa ecology practices between spa and medical settings, including the disposal of medical waste.
10502112 Medical Spa Aesthetics (2 cr.)	Explore the aestheticianâ€™s role in healthcare and aspects of working in a medical setting. Become familiar with common medical-grade treatments and advanced skin care techniques.

Course Descriptions

10502113 Laser Theory and Applications (2 cr.)	Study safety and control measures within cosmetic laser environments, including Laser Safety Officer duties, contraindications to laser treatments and all related safety and first aid components. Explore the physics, safety, hazard assessment and risk management aspects of working with lasers, and discuss the compliance measures needed to meet OSHA and other regulatory requirements.
10502114 Laser Treatments and Procedures (2 cr.)	Study aesthetic laser treatments performed or assisted by aestheticians under the supervision of a medical director. Explore procedures including laser treatments, Botox, injections and soft tissue fillers, and learn to provide treatment assessments and plans.
10502115 Advanced Make-up Techniques (2 cr.)	Explore advanced makeup techniques through a variety of genres including theater, fashion, period, and photography. Study advanced forms of makeup application including airbrushing, tattooing, microblading, and eyelash extensions.
10502116 Advanced Aesthetics Clinic 1-Introductory (2 cr.)	Practice learned skills on clients by selecting modalities and treating the patient. Implement advanced treatments including dermabrasion, dermaplaning, oxygen, and ultrasound treatments, hydrafacials and medium-depth chemical peels in the FVTC Trilogy Salon and Spa.
10502117 Advanced Facial Treatments (1 cr.)	Study advanced skin treatments offered in a medical setting under the supervision of a physician or medical director. Gain theoretic knowledge of skin therapies including medium-depth skin peels and the use of lasers for collagen synthesis, cellular stimulation and hair reduction. Explore additional therapeutic applications of ultrasound and micro-current in both skin and body.
10502118 Advanced Body Treatments (1 cr.)	Explore advanced spa services, body treatments, and alternative massage-related therapies provided in a medical spa setting. Learn to identify, explain, and perform spa treatments and services suited for individual client needs.
10502119 Advanced Aesthetics Clinic 2 - Intermediate (3 cr.)	Practice learned skills on clients by selecting modalities and treating the patient. Review protocols, consents and post-care education to be explained to the patient. Implement advanced treatments including monopolar and bipolar radio frequency, micro-needling and light pulse treatments in the FVTC Trilogy Salon and Spa.
10502120 Medical Conditions and Care (2 cr.)	Discover how to support the work of physicians and other aesthetic providers in a clinic setting. Learn how to record information in medical recordkeeping systems, prepare and handle medical instruments and supplies, and collect and prepare specimens of bodily fluids and tissues for laboratory testing.

Course Descriptions

10502121 Trends in Approaches to Skin Care (1 cr.)	Explore trending approaches to skin care and gain exposure to current technology and equipment. Tour facilities and participate in lectures and discussions with speakers representing laser and aesthetic equipment and medical grade products.
10502122 Advanced Aesthetics Clinic 3 - Mastery (3 cr.)	Continue to implement advanced aesthetic treatments in the FVTC Trilogy Salon and Spa while learning about advanced medical-level equipment and procedures. Shadow professional aestheticians, and perform aesthetic spa services.
10502123 Aesthetic Spa Services 3 - Advanced (2 cr.)	Provide aesthetic services to guests in a spa setting, including deep cleansing galvanic current, light therapy, microdermabrasion, and chemical exfoliation along with extractions. Students begin body treatments, scrubs and wraps for health and wellness and learn about state board exam expectations. Students also learn the advanced skills required for salon management related to Wisconsin state laws. Students will complete a business plan and advance their job seeking skills.
10502125 Anatomy & Physiology Aesthetics (1 cr.)	Applying laser treatment protocols, giving face and body treatments, and providing skincare analysis all require complex knowledge of the human body. Focus on advanced facial anatomy, musculature, and nervous systems relating to the application of medical aesthetics in this course.
10502156 Aesthetic Spa Sciences (2 cr.)	Introduces the science of aesthetic services including an introduction to electricity and anatomy. Discover life skills for success. Learn to describe the chemical composition of salon/spa products and determine the effects on the hair and skin. Apply sanitation practices to the salon/spa setting.
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.

Course Descriptions

10804107 College Mathematics (3 cr.)	This course is designed to review and develop fundamental concepts of mathematics in the areas of algebra, geometry, trigonometry, measurement and data. Algebra topics emphasize simplifying algebraic expressions, solving linear equations and inequalities with one variable, solving proportions and percent applications. Geometry and trigonometry topics include; finding areas and volumes of geometric figures, applying similar and congruent triangles, applying Pythagorean Theorem, and solving right triangles using trigonometric ratios. Measurement topics emphasize the application of measurement concepts and conversion techniques within and between U.S. customary and metric system to solve problems. Data topics emphasize data organization and summarization skills, including: frequency distributions, central tendency, relative position and measures of dispersion. Special emphasis is placed on problem solving, critical thinking and logical reasoning, making connections, and using calculators.
10806134 General Chemistry (4 cr.)	Covers the fundamentals of chemistry. Topics include scientific method, problem-solving using quantitative, characteristics of matter, periodic relationships of elements, chemical bonding, chemical reactions, chemical equilibrium, analysis of chemical substances, characteristics of aqueous solutions, acids, bases, and gas laws.
10809166 Intro to Ethics: Theory & App (3 cr.)	This course provides a basic understanding of the theoretical foundations of ethical thought. Diverse ethical perspectives will be used to analyze and compare relevant issues. Students will critically evaluate individual, social and professional standards of behavior, and apply a systematic decision-making process to these situations.
10809199 Psychology of Human Relations (3 cr.)	Explores the relationship between the general principles of psychology and our everyday lives. Students are given the opportunity to achieve a deepened sense of awareness of themselves and others. This understanding enables students to improve their relationships with others at work, in the family, and in society.
502 - Nail Technician	
31502301 Salon Theory and Ecology (2 cr.)	Learn theoretical concepts in microbiology and decontamination, general chemistry, micro-hair structure and anatomy as related to the profession. Sanitation and infection control practices will be taught to keep the salon clean and customers safe utilizing the Wisconsin Statutes and Administrative Codes relating to safety and sanitation in the salon.

Course Descriptions

31502312 Nail Services (3 cr.)	Students develop nail service skills while working with customers in a salon environment and apply knowledge and skills learned in related theory classes to hands-on work experience. Students perform all manicure and pedicure services as well as nail extension services.
31502330 Salon Management Skills (2 cr.)	Introduces the fundamental skills required for lawful and effective salon practice and management, including Wisconsin state laws and regulatory rules.
31502374 Nails (2 cr.)	Study the structure, growth, diseases, disorders and conditions of the nail. Practice infection control procedures to protect the client and practitioner. Study the anatomy of the hand, arm, foot and leg to effectively apply massage techniques relating to nail services. Perform manicure and pedicure services to include polish application and massage techniques.

503 - Fire Fire Protection Technician

10503105 Technical Rescue (3 cr.)	Exposes the student to labor-intensive requirements in team-based technical rescue. Students will be trained in rope rescue, confined space rescue, and trench rescue to the operations level.
10503130 Fire Protection Internship (2 cr.)	Provides an opportunity for students to perform the duties of a municipal firefighter while serving the typical 24-hour shift, excluding FVTC class periods, at one of several fire departments. Fire department officers evaluate student performance. Department consent required.
10503135 Firefighter Functional Fitness (1 cr.)	Assess existing physical fitness abilities; improve upon the existing physical fitness level; and survey requirements for fire department physical agility testing as part of the hiring process.
10503142 Fire Fighting Principles (4 cr.)	Describes basic fire behavior, techniques used to control structural and related fire emergencies, and life safety practices. Students perform all practical evolutions necessary to control and extinguish fires and otherwise meet all requirements for Firefighter I certification with the State of Wisconsin.
10503143 Building Construction for Fire Protection (3 cr.)	This course provides the components of building construction related to firefighter and life safety. The elements of construction and design of structures are shown to be key factors when inspecting buildings, preplanning fire operations, and operating at emergencies.

Course Descriptions

10503149 Hazardous Materials Technician (3 cr.)

Provides a student, through this 90-hour course, with the information and skills needed to meet the training requirements and knowledge cited in NFPA 1072, Awareness, Operations (including mission specific competency) and Technician levels. The student will learn to recognize, evaluate, mitigate and control incidents involving the release of hazardous materials. This course meets OSHA 1910.120 and EPA 165.5. and prepares a student for IFSAC and ProBoard certification.

10503151 Fire Prevention (4 cr.)

This course provides fundamental knowledge relating to the field of fire prevention. Topics include: history and philosophy of fire prevention; organization and operation of a fire prevention bureau; use and application of codes and standards; plans review; fire inspections; fire and life safety education; and fire investigation.

10503156 Strategies, Tactics, and Incident Management Systems (4 cr.)

Provides the principles of fire ground control through utilization of personnel, equipment, and extinguishing agents. Prepares students to pursue current national ICS training requirements.

10503157 Fire Investigation (3 cr.)

Provides learners with the fundamentals and technical knowledge needed for proper fire scene investigations.

10503191 Principles of Emergency Services (2 cr.)

This course introduces the student to the organization and management of a fire and emergency services department and the relationship of government agencies to the fire service. Emphasis is placed on fire and emergency service, ethics, and leadership from the perspective of the company officer.

10503192 Principles of Emergency Services Safety and Survival (3 cr.)

This course introduces the basic principles and history related to the national firefighter life safety initiatives, focusing on the need for cultural and behavior change throughout the emergency services.

10503193 Fire Protection Systems (3 cr.)

This course provides information relating to the features of design and operation of fire alarm systems, water-based fire suppression systems, special hazard fire suppression systems, water supply for fire protection and portable fire extinguishers.

10503194 Fire Protection Hydraulics (3 cr.)

Provides instruction and opportunity to understanding and put into practice basic defensive driving techniques. This course meets the requirements of NFPA 1002, Standard for Fire Apparatus Driver/Operator Professional Qualifications, Driver/Operator – Pumper Job Performance Requirements (JPRs).

10503195 Fire Behavior and Combustion (3 cr.)

This course explores the theories and fundamentals of how and why fires start, spread, and are controlled.

Course Descriptions

10531169 Emergency Medical Technician - Basic (5 cr.)	Presents and evaluates the knowledge and skills needed by ambulance personnel to respond to and treat cardiac arrest and critical medical and trauma situations. Extrication and ambulance operations are also covered. The course does include CPR certification.
10801136 English Composition 1 (3 cr.)	Learners develop and apply skills in all aspects of the writing process. Through a variety of learning activities and written documents, learners employ rhetorical strategies, plan, organize and revise content, apply critical reading strategies, locate and evaluate information, integrate and document sources, and apply standardized English language conventions.
10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
10804107 College Mathematics (3 cr.)	This course is designed to review and develop fundamental concepts of mathematics in the areas of algebra, geometry, trigonometry, measurement and data. Algebra topics emphasize simplifying algebraic expressions, solving linear equations and inequalities with one variable, solving proportions and percent applications. Geometry and trigonometry topics include; finding areas and volumes of geometric figures, applying similar and congruent triangles, applying Pythagorean Theorem, and solving right triangles using trigonometric ratios. Measurement topics emphasize the application of measurement concepts and conversion techniques within and between U.S. customary and metric system to solve problems. Data topics emphasize data organization and summarization skills, including: frequency distributions, central tendency, relative position and measures of dispersion. Special emphasis is placed on problem solving, critical thinking and logical reasoning, making connections, and using calculators.
10806189 Basic Anatomy (3 cr.)	Examines basic concepts of human anatomy and physiology. Learners explore the structure and function of all body systems.
10809196 Intro to Sociology (3 cr.)	Introduces students to the fundamental sociological concepts, including sociological perspectives, research methods, the significance of culture in society, and the socialization process. Other topics include deviance, the impact of groups on behavior, societal inequities, global changes, the role of social institutions, and social stratification.

Course Descriptions

10809198 Intro to Psychology (3 cr.) This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.

504 - Criminal Asset Protection

10102112 Business, Introduction to (3 cr.) Provides an overview of the variety of activities in the world of business. It focuses on the responsibilities connected with operating a business from both organizational and managerial viewpoints. It also examines the role of government in business.

10150144 Ethical Hacking (3 cr.) Introduces the techniques hackers use to discover vulnerabilities. Students will learn ways to tighten the network security to protect the exposed data from the discovered vulnerabilities. Focus is on penetration-testing tools and techniques that security testers and ethical hackers use to protect computer networks.

10150161 Information Assurance (2 cr.) Examines the basics of information security, including access control and organizational security policies. This course will include the process of securing user workstations, laptops and mobile devices.

10150162 Network Essentials (2 cr.) Provides an introduction to networking theory and technologies, including the basics of communication, common protocols, the OSI model, network topologies, local network media, network devices, network security and networking tools. Includes more in-depth study of the components of TCP/IP, Ethernet, and wireless networks. Involves considerable time developing troubleshooting skills.

10150168 Security Monitoring and Operations (3 cr.) Examine the systems put in place to analyze threats and detect anomalies that could indicate a security incident. The challenge companies face is timely detection when they are victimized by an attack. Students will become familiar with policies, procedures, and continuous monitoring programs that can be utilized to protect an organization.

10504106 Principles of Emergency Management (3 cr.) Introduces the student to the principles, theories, and practices of emergency management. The philosophy of comprehensive Emergency Management will be discussed including mitigation, preparedness, response and recovery. In addition, students will obtain ICS-100 and FEMA IS-700 certification.

10504108 Physical Security Applications (3 cr.) Studies the applications of all forms of physical security equipment used in the security profession. Areas of concentration include security lighting, barriers, security design, locks, entry control, cargo security, guard forces and the integration of these forms.

Course Descriptions

10504109 Electronic Security Applications (3 cr.)

Studies the applications of all forms of electronic equipment used in the security profession. Areas of concentration include interior and exterior intrusion sensors, video, access control, contamination sensors, personnel screening devices, voice and data communications, and the integration of such equipment.

10504123 Security Law (3 cr.)

Examines the legal principles applicable to the security field. Included are the legal topics of negligence, intentional torts, agency and business liability for 3rd party acts. In addition, the student will learn about probable cause, arrest, search and seizure, and interrogation from a private security perspective.

10504142 Private Investigations, Introduction to (3 cr.)

A study of investigations in the private and corporate sectors. Topics include investigative techniques relating to open record laws and searches, techniques of surveillance, employee screening, evidence collection, insurance fraud investigations, interviewing techniques, sources of information, and computer and other technology used in research. Applicable state statutes of attendees will be researched, and licensing requirements discussed.

10504147 Industrial Security (3 cr.)

Provides an examination of security requirements and responsibilities of the security professional for the private sector employer/manufacturer. An in-depth study of employee access control, employee theft, staffing, risk management, internal and external controls, fire control systems, asset protection and work place violence are just a few areas that will be examined.

10504203 Crime Prevention Principles (3 cr.)

This course explores ways to protect personal items. In this course students will understand the different types of glazing materials, environmental design, principles of lighting, how to conduct a building survey, hold community meetings and continue to educate the public.

10504204 Criminal Justice System (3 cr.)

Distinguish the roles of courts and law enforcement agencies; identify the purpose of law enforcement in American society; describe how professionalism and ethics relate to law enforcement; understand crime in America; explain basic aspects of criminal law; gain an understanding of sentencing of offenders as it relates to prison and jails; compare adult and juvenile justice.

10504207 Communicating Professionally (3 cr.)

Apply knowledge of the communication process, communication techniques, integrate verbal and physical intervention skills, develop strategies to obtain information in a variety of situations, differentiate between an interview and an interrogation, and analyze information for consideration as corroborative evidence.

Course Descriptions

- 10801195 Written Communication (3 cr.)** Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
- 10801196 Oral/Interpersonal Comm (3 cr.)** Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
- 10804107 College Mathematics (3 cr.)** This course is designed to review and develop fundamental concepts of mathematics in the areas of algebra, geometry, trigonometry, measurement and data. Algebra topics emphasize simplifying algebraic expressions, solving linear equations and inequalities with one variable, solving proportions and percent applications. Geometry and trigonometry topics include; finding areas and volumes of geometric figures, applying similar and congruent triangles, applying Pythagorean Theorem, and solving right triangles using trigonometric ratios. Measurement topics emphasize the application of measurement concepts and conversion techniques within and between U.S. customary and metric system to solve problems. Data topics emphasize data organization and summarization skills, including: frequency distributions, central tendency, relative position and measures of dispersion. Special emphasis is placed on problem solving, critical thinking and logical reasoning, making connections, and using calculators.
- 10809103 Think Critically & Creatively (3 cr.)** Provides instruction about critical and creative thinking that is in high demand in all occupations. Models, theories, and processes provide the foundation for learning logical thinking strategies. Students will apply a systematic approach to problem solving by analyzing the problem, assessing possible solutions, and making effective decisions. In addition, students will generate ideas and analyze complex issues. This course assists students with developing a critical thinking mindset which is essential at every level of personal and professional life.
- 10809196 Intro to Sociology (3 cr.)** Introduces students to the fundamental sociological concepts, including sociological perspectives, research methods, the significance of culture in society, and the socialization process. Other topics include deviance, the impact of groups on behavior, societal inequities, global changes, the role of social institutions, and social stratification.

Course Descriptions

10809199 Psychology of Human Relations (3 cr.)

Explores the relationship between the general principles of psychology and our everyday lives. Students are given the opportunity to achieve a deepened sense of awareness of themselves and others. This understanding enables students to improve their relationships with others at work, in the family, and in society.

504 - Criminal Child Protection Investigator

10504110 Introduction to Forensic Science (3 cr.)

Explores the applications of science in the field of crime scene management from the crime scene to the courtroom and beyond. Students will focus on the examination and reconstruction of various crime scenes with the emphasis on the identification, collection, documentation and preservation of physical evidence.

10504126 Criminal Deviant Behavior (3 cr.)

Designed as a critical examination of the nature and extent of deviant behavior in our societies. Particular attention will be given to the causes and consequences of deviant behavior and to the social relations and processes associated with the more common forms of deviant and criminal expression within American society. In-depth study of sexual abuse of children by situational and preferential molesters. Case examples will be discussed.

10504127 Investigation of Child Abuse (2 cr.)

Examines, studies and researches the different types of child abuse that exist within our society. Pivotal to this course will be the multiple causes of child abuse and identifying the dynamics of child abuse, such as physical abuse, sexual abuse, child neglect, mental harm, child fatality, abducted children and Internet child exploitation. Major emphasis is on identifying the suspect or primary care provider and understanding the implementation of an effective protocol and multidisciplinary team approach that is the basis for an effective investigation of any child abuse case.

10504128 Forensic Application Child Abuse Investigations (2 cr.)

Explores the role of forensics and scientific crime scene investigation of child abuse cases. Emphasis is on identification and detection methods and the collection and gathering of evidence. This course also examines cybercrime and legal considerations facing law enforcement and cyber-security professionals in dealing with discovering, investigating and prosecuting cybercrimes within child abuse.

10504209 Juvenile Procedures (3 cr.)

Describe the juvenile justice system; describe how juveniles in need of protection or services or delinquent are handled; identify constitutional law issues relevant to juveniles; analyze the role of law enforcement and other agencies in responding to and investigating child maltreatment; and recognize the unique investigative issues for missing children.

504 - Criminal Corrections

Course Descriptions

10504170 Correctional Administration (3 cr.)	Teaches students the basics of the role of the administrator in a correctional facility. Topics include the role of the correctional supervisor, human resource management, strategic planning, policy development and inmate management.
10504171 Correctional Institutions (3 cr.)	Teaches students about the history and present practice of the correctional institution. Topics include the development of prisons, the penal system, inmate profiles and special groups, as well as prison programs and services.
10504172 Correctional Sociology (3 cr.)	Teaches students the sociology of the correctional institution's inmate population & staffing. Topics include the admission process, adjustment to confinement, formal and informal organizations, violence and suicide prevention and the supervision of special offenders. The course covers both adult and juvenile populations.
10504173 Corrections Law (3 cr.)	Teaches students the laws and regulations affecting the correctional institution. Topics include understanding the Federal and State Court System, criminal and civil actions, sentencing and plea bargains, and prisoner rights and inmate litigation.
10504175 Correctional Security (3 cr.)	Teaches students the basics of correctional security. Topics include inmate security control, inspections, movements, counts, privacy and safety, contraband, and equipment and building security. Personal protection, hostage negotiations and pad subduing techniques will also be discussed.

504 - Criminal Crime Prevention

10504102 Crime Prevention Surveys (2 cr.)	Conduct basic crime prevention surveys on smaller businesses to identify security-related vulnerabilities and recommended solutions. Students will learn the mechanics of completing a survey form and use the form for their surveys. Students will be required to identify 2-3 cooperating business entities to complete the requisite survey work.
10504108 Physical Security Applications (3 cr.)	Studies the applications of all forms of physical security equipment used in the security profession. Areas of concentration include security lighting, barriers, security design, locks, entry control, cargo security, guard forces and the integration of these forms.
10504109 Electronic Security Applications (3 cr.)	Studies the applications of all forms of electronic equipment used in the security profession. Areas of concentration include interior and exterior intrusion sensors, video, access control, contamination sensors, personnel screening devices, voice and data communications, and the integration of such equipment.

Course Descriptions

10504143 CPTED Applications (2 cr.)	Examines the built environment in the study of Crime Prevention Through Environmental Design (CPTED). Students will learn how the physical design of buildings, parking lots, entry ways, streets and even subdivisions can affect the level of crime in the surrounding area. Students will examine their own environment for examples of CPTED, apply it to the proper principles, and identify corrective measures.
10504148 Asset Protection, Principles of (3 cr.)	Studies issues relating to workplace violence, employee theft, computer security, consumer fraud, supply chain security, environmental compliance, loss prevention, business disaster recovery, substance abuse, negligent hiring and other relevant issues.
10504190 Community Crime Prevention (1 cr.)	Instructs subject areas that are frequently requested by neighborhood watch, service club and related community groups. Topics include consumer fraud, identity theft, sexual assault prevention, Internet safety, auto theft and travel safety.
10504192 Crime Prevention Planning (3 cr.)	Learn techniques to solve crime-related challenges in the community and create partnerships in crime prevention. Techniques for problem solving, engaging community members, building cohesiveness and dealing with diversity will be addressed.
10504203 Crime Prevention Principles (3 cr.)	This course explores ways to protect personal items. In this course students will understand the different types of glazing materials, environmental design, principles of lighting, how to conduct a building survey, hold community meetings and continue to educate the public.

504 - Criminal Criminal Investigator

10504110 Introduction to Forensic Science (3 cr.)	Explores the applications of science in the field of crime scene management from the crime scene to the courtroom and beyond. Students will focus on the examination and reconstruction of various crime scenes with the emphasis on the identification, collection, documentation and preservation of physical evidence.
10504124 Interview & Interrogation (3 cr.)	Covers legal issues and a working knowledge of interview and interrogation techniques in agreement with current legal stipulations. Learn various forms of communications including verbal and nonverbal, as well as written statement analysis. Students will be instructed in appropriate interview techniques, the interviewing of victims and witnesses and interrogation techniques. Characteristics of the sociopath/psychopathic personality types will be examined. Students will also learn how to prepare for and testify in a court of law.

Course Descriptions

10504131 Basic Crime Scene Photography (3 cr.)

Designed to develop basic skills in preparing effective crime scene photographs and to instruct the student in the type of photographs necessary, as well as the lighting needed for good crime scene photography. This course will educate the crime scene investigator, homicide detective, sworn law enforcement officer, rape detective, arson investigator, domestic violence investigator, and other law enforcement personnel in the aspects of photography and provide the skills needed to apply this technology in the crime scene investigation field and/or related areas.

10504142 Private Investigations, Introduction to (3 cr.)

A study of investigations in the private and corporate sectors. Topics include investigative techniques relating to open record laws and searches, techniques of surveillance, employee screening, evidence collection, insurance fraud investigations, interviewing techniques, sources of information, and computer and other technology used in research. Applicable state statutes of attendees will be researched, and licensing requirements discussed.

10504176 CCI: Computer Crime Investigation (2 cr.)

Provides students with the skills, knowledge and ability to conduct computer crime investigations. Students will learn investigative protocols that can be applied to various types of computer crimes, focusing on the collection of evidence to initiate a criminal prosecution.

10504178 CCI: Investigating Internet Crime (2 cr.)

Provides students with an understanding of the nature of crimes being committed on the Internet and the skills necessary to successfully investigate Internet-related crime. Students will learn various investigative techniques, protocols and technical tools necessary to identify offenders and acquire evidence to build a prosecutable case.

504 - Criminal Criminal Justice - Law Enforcement 720 Academy

30504500 Overview of Patrol Response (2 cr.)

Through classroom lecture, and on-campus lab, and WI Department of Justice integration exercises students will learn and apply skills addressed in the following WI Department of Justice 720 Academy curriculum framework Phase I topics: Critical Thinking and Decision-Making, Basic Response (RESPOND), Radio Procedures, Introduction to TraCS, Traffic Law Enforcement I, First Aid, CPR/AED, and Naloxone/Narcan, and Physical Fitness. This course will also include the WI DOJ 720 Academy Integration Exercises.

30504501 Physical Fitness (1 cr.)

Through classroom lecture and on-campus lab students will apply Phases I-III Physical Fitness WI Department of Justice 720 Academy curriculum framework program requirements and Officer Wellness Suicide Prevention.

Course Descriptions

30504502 Application of Investigations (1 cr.)	Through classroom lecture, on-campus lab, and WI Department of Justice 720 Academy integration exercises students will learn and apply skills addressed in the following Phase III topics of the Department of Justice 720 Academy curriculum framework: Ethics II: Moral Reasoning and Professional Conduct, Cultural Competence II, Interrogations, Testifying in Court, Crimes III and Physical Evidence Collection.
30504503 Overview of Criminal Justice (1 cr.)	Through classroom lecture and WI Department of Justice 720 Academy integration exercises, students will learn and apply skills addressed in the following WI Department of Justice 720 Academy Phase I curriculum framework topics: Academy Orientation, Fundamentals of Criminal Justice, Ethics I, Cultural Competence, Agency Policy, and Professional Communication Skills I.
30504504 Principles of Emergency Vehicle Response (2 cr.)	Through classroom lecture, and on-campus lab, and WI Department of Justice 720 Academy integration exercises students will learn and apply skills addressed in the following Department of Justice 720 Academy Phase II topics: Emergency Vehicle Operation and Control (EVOC) and Vehicle Contacts II.
30504505 Sensitive Crimes (2 cr.)	Through classroom lecture, and on-campus lab and WI Department of Justice 720 Academy integration exercises, students will learn and apply skills addressed in the following Department of Justice 720 Academy curriculum framework Phase III topics: Domestic Violence, Juvenile Law, Victims, Sexual Assault, and Child Maltreatment. The DOJ Phase III Written Examination will be administered in this course.
30504506 Overview of Investigations (2 cr.)	Through classroom lecture, on-campus lab, and WI Department of Justice 720 Academy integration exercises students will learn and apply skills addressed in the following Department of Justice 720 Academy curriculum framework Phase I topics: Constitutional Law I, Crimes I, Interviews, and Report Writing I. The DOJ Phase I Written Examination will be administered in this course.
30504507 Application of Traffic Response (3 cr.)	Through classroom lecture, and on-campus lab and WI Department of Justice integration exercises, students will learn and apply skills addressed in the following Phase III topics from the WI Department of Justice 720 Academy curriculum framework: Traffic Law Enforcement - Core and Radar, Traffic Crash Investigations & Incident Management, Operating a Motor Vehicle While Intoxicated (OMVWI), Standardized Field Sobriety Tests (SFST), Hazardous Materials and Weapons of Mass Destruction (WMD), Incident Command Systems and NIMS, and Report Writing.

Course Descriptions

- 30504508 Principles of Investigations (1 cr.)** Through classroom lecture, and on-campus lab, and WI Department of Justice 720 Academy integration exercises students will learn and apply skills addressed in the following Phase II topics of the WI Department of Justice 720 Academy curriculum framework: Constitutional Law II, Physical Evidence Collection, and Crisis Management. The Phase II Written Exam will be given in this course.
- 30504509 Principles of Tactics (5 cr.)** Through classroom lecture and on-campus lab and integration exercises, students will learn and apply skills addressed in the following Phase II topics from the Department of Justice 720 Academy curriculum frameworks including: Professional Communication Skills II, DAAT, Firearms II, Tactical Response, and Tactical Emergency Critical Care For Law Enforcement Officers.
- 30504510 Overview of Tactics (1 cr.)** Through classroom lecture, and on-campus lab and WI Department of Justice 720 Academy integration exercises, students will learn and apply skills addressed in the following Department of Justice 720 Academy curriculum framework Phase I topics: Fundamentals of Firearms, Vehicle Contacts I, Officer Wellness I, and DAAT I.
- 30504511 Scenario Assessment (1 cr.)** A capstone course to assess the learner's cumulative knowledge through the use of scenarios in the Law Enforcement Academy curriculum.
- 30531331 Law Enforcement Emergency Response (1 cr.)** Learn how to perform an initial medical assessment for injury or medical condition, how to provide immediate treatment for a variety of injuries and conditions, and how to perform CPR and use an automatic emergency defibrillator.

504 - Criminal Criminal Justice Studies

- 10504103 Cultural Diversity In Criminal Justice (3 cr.)** Explore the impact of varied cultures on American policing, courts, and corrections.
- 10504106 Principles of Emergency Management (3 cr.)** Introduces the student to the principles, theories, and practices of emergency management. The philosophy of comprehensive Emergency Management will be discussed including mitigation, preparedness, response and recovery. In addition, students will obtain ICS-100 and FEMA IS-700 certification.
- 10504110 Introduction to Forensic Science (3 cr.)** Explores the applications of science in the field of crime scene management from the crime scene to the courtroom and beyond. Students will focus on the examination and reconstruction of various crime scenes with the emphasis on the identification, collection, documentation and preservation of physical evidence.
- 10504117 Employment Strategies in Public Safety (1 cr.)** Designed for students seeking employment in such public or private emergency services as law enforcement, firefighting, security and emergency medical services. This course requires practical application of classroom information pertaining to employment applications and interviews.

Course Descriptions

10504120 Cultural Competence and Ethics in Criminal Justice (3 cr.)

Provides a basic understanding of the theoretical foundations of ethical thoughts and cultural competence. Diverse ethical perspectives and cultural competence practices will be used to analyze and compare relevant issues in law enforcement. Student will critically evaluate individual, social and/or professional standards of behavior within society/law enforcement and also apply a systematic decision-making process to these situations.

10504200 Criminal Justice Issues Capstone (2 cr.)

Covers the latest developments in criminal justice employment. This course is designed to give prospective law enforcement officers a realistic view of related occupations. Topics include liability, affirmative action, organized unions, statutes relating to employment in various agencies, stress factors, agency policies, civil rights of employees, ethics, and automation and technology.

10504201 Introduction to Corrections (3 cr.)

Examines the concept of punishment and its form, functions, and enforcement throughout history, with an emphasis on the operation, structure, clientele, and issues confronting the institutions, agencies, and programs encompassing the corrections system including jails, prisons, and probation and parole.

10504203 Crime Prevention Principles (3 cr.)

This course explores ways to protect personal items. In this course students will understand the different types of glazing materials, environmental design, principles of lighting, how to conduct a building survey, hold community meetings and continue to educate the public.

10504204 Criminal Justice System (3 cr.)

Distinguish the roles of courts and law enforcement agencies; identify the purpose of law enforcement in American society; describe how professionalism and ethics relate to law enforcement; understand crime in America; explain basic aspects of criminal law; gain an understanding of sentencing of offenders as it relates to prison and jails; compare adult and juvenile justice.

10504205 Writing Reports (3 cr.)

Explain the context of report writing, take effective field notes, organize information in reports, write narratives, describe what information should be included in certain types of reports, prepare for court, describe how to be an effective witness, and testify as a witness in court.

10504207 Communicating Professionally (3 cr.)

Apply knowledge of the communication process, communication techniques, integrate verbal and physical intervention skills, develop strategies to obtain information in a variety of situations, differentiate between an interview and an interrogation, and analyze information for consideration as corroborative evidence.

Course Descriptions

- 10504208 Criminal Procedures (3 cr.)** Identify basic concepts of criminal law; analyze facts, circumstances, and situations and determine which crimes against persons have been committed; analyze facts, circumstances, and situations and determine which crimes against property have been committed; and analyze facts, circumstances, and situations and determine which crimes involving drugs, alcohol or other criminal activity have been committed.
- 10504209 Juvenile Procedures (3 cr.)** Describe the juvenile justice system; describe how juveniles in need of protection or services or delinquent are handled; identify constitutional law issues relevant to juveniles; analyze the role of law enforcement and other agencies in responding to and investigating child maltreatment; and recognize the unique investigative issues for missing children.
- 10504210 Police Community Relations (3 cr.)** Identify available community resources; explain the rewards and challenges of a diverse society; evaluate communication barriers with the public; respond to hate crimes; apply statutory requirements for emergency detentions and emergency protective placements of persons; apply crisis intervention principles and techniques; describe policing strategies; and apply principles of crime prevention.
- 10504211 Constitutional Principles (3 cr.)** Diagram the structure of the criminal justice system; identify when constitutional rules apply; identify the elements of a lawful arrest; identify the requirements for search warrants, and when warrantless searches are permitted; identify the requirements governing confessions and statements; and analyze the requirements for evidence to be admissible in court.
- 10801195 Written Communication (3 cr.)** Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
- 10801196 Oral/Interpersonal Comm (3 cr.)** Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.

Course Descriptions

10804135 Quantitative Reasoning (3 cr.) This course is intended to develop analytic reasoning and the ability to solve quantitative problems. Topics to be covered may include: construction & interpretation of graphs; descriptive statistics; geometry & spatial visualizations; math of finance; functions and modeling; probability; and logic. Appropriate use of units and dimensions, estimates, mathematical notation, and available technology will be emphasized throughout the course.

10809159 Abnormal Psychology (3 cr.) The course addresses the foundations of abnormal psychology and psychological disorders, including their characteristics, possible causes, assessments, diagnostic processes, and treatments. The course includes examination of major historical and theoretical perspectives, research, sociocultural considerations, and elements of psychological wellness.

10809196 Intro to Sociology (3 cr.) Introduces students to the fundamental sociological concepts, including sociological perspectives, research methods, the significance of culture in society, and the socialization process. Other topics include deviance, the impact of groups on behavior, societal inequities, global changes, the role of social institutions, and social stratification.

10809198 Intro to Psychology (3 cr.) This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.

504 - Criminal Cyber Crime Investigation

10150144 Ethical Hacking (3 cr.) Introduces the techniques hackers use to discover vulnerabilities. Students will learn ways to tighten the network security to protect the exposed data from the discovered vulnerabilities. Focus is on penetration-testing tools and techniques that security testers and ethical hackers use to protect computer networks.

10504176 CCI: Computer Crime Investigation (2 cr.) Provides students with the skills, knowledge and ability to conduct computer crime investigations. Students will learn investigative protocols that can be applied to various types of computer crimes, focusing on the collection of evidence to initiate a criminal prosecution.

10504177 CCI: Computer Crime Law (3 cr.) Provides students with an understanding of the nature and application of laws related to computer crime. Students will learn and apply state and federal laws regarding criminal violations, the search and seizure of electronic evidence, and presenting computer crime evidence in court.

Course Descriptions

10504178 CCI: Investigating Internet Crime (2 cr.)

Provides students with an understanding of the nature of crimes being committed on the Internet and the skills necessary to successfully investigate Internet-related crime. Students will learn various investigative techniques, protocols and technical tools necessary to identify offenders and acquire evidence to build a prosecutable case.

10504179 CCI: Basic Data Recovery (2 cr.)

Provides students with a basic understanding of how forensic evidence is recovered from a computer or similar device. Students will learn the necessary steps involved in preserving, authenticating, and analyzing data stored on computing devices, while maintaining the integrity of evidence found on these devices.

504 - Criminal Evidence Technician

10504110 Introduction to Forensic Science (3 cr.)

Explores the applications of science in the field of crime scene management from the crime scene to the courtroom and beyond. Students will focus on the examination and reconstruction of various crime scenes with the emphasis on the identification, collection, documentation and preservation of physical evidence.

10504122 Biological & Trace Evidence (3 cr.)

Provides the student with the knowledge of protecting, recognizing, documenting, collecting, preserving and analysis of biological and trace evidence. Students will learn about the different types of biological evidence and trace evidence that can be used to assist in criminal investigations. This course deals with the real science and myths of DNA along with the identifying suitable types of evidence for DNA analysis. This course is offered on-campus in fall term and online in spring term.

10504131 Basic Crime Scene Photography (3 cr.)

Designed to develop basic skills in preparing effective crime scene photographs and to instruct the student in the type of photographs necessary, as well as the lighting needed for good crime scene photography. This course will educate the crime scene investigator, homicide detective, sworn law enforcement officer, rape detective, arson investigator, domestic violence investigator, and other law enforcement personnel in the aspects of photography and provide the skills needed to apply this technology in the crime scene investigation field and/or related areas.

Course Descriptions

10504146 Impression Evidence (3 cr.) Focuses on the many different types of two/three dimensional impression evidence (footwear, fingerprints, tool marks, tire tread, etc.) found at crime scenes, detection/recovery techniques in the field and examinations in the lab and beyond to include the courtroom. Students will have practical hands-on applications (casting, lifts, etc.) with the collection techniques used in the field and lab environment. This will aid the student in developing tools and technologies to enhance their abilities to identify, document, collect and preserve impression evidence. This course is offered online in fall term and on-campus in spring term.

10504168 Property/Evidence Management (2 cr.) Focuses on the applications of all forms of property and evidence management systems that include a number of key stages from the piece of property/evidence's acquisition to its eventual disposal. Students will learn versatile time saving tools for managing property, evidence, and equipment through warehousing and inventory control. Develop formal standards for the management, administration, handling of property/evidence and benchmark references specific to the initial property/evidence handling procedures and life time standards for an organization.

504 - Criminal Forensic Science

10504103 Cultural Diversity In Criminal Justice (3 cr.) Explore the impact of varied cultures on American policing, courts, and corrections.

10504105 Basic Medicolegal Death Investigation (3 cr.) Based on the standards set by the American Board of Medicolegal Death Investigators (ABMDI) students will learn to investigate a death scene. Topics will include investigations from homicide to accidents to natural causes.

10504110 Introduction to Forensic Science (3 cr.) Explores the applications of science in the field of crime scene management from the crime scene to the courtroom and beyond. Students will focus on the examination and reconstruction of various crime scenes with the emphasis on the identification, collection, documentation and preservation of physical evidence.

10504122 Biological & Trace Evidence (3 cr.) Provides the student with the knowledge of protecting, recognizing, documenting, collecting, preserving and analysis of biological and trace evidence. Students will learn about the different types of biological evidence and trace evidence that can be used to assist in criminal investigations. This course deals with the real science and myths of DNA along with the identifying suitable types of evidence for DNA analysis. This course is offered on-campus in fall term and online in spring term.

Course Descriptions

10504131 Basic Crime Scene Photography (3 cr.)

Designed to develop basic skills in preparing effective crime scene photographs and to instruct the student in the type of photographs necessary, as well as the lighting needed for good crime scene photography. This course will educate the crime scene investigator, homicide detective, sworn law enforcement officer, rape detective, arson investigator, domestic violence investigator, and other law enforcement personnel in the aspects of photography and provide the skills needed to apply this technology in the crime scene investigation field and/or related areas.

10504146 Impression Evidence (3 cr.)

Focuses on the many different types of two/three dimensional impression evidence (footwear, fingerprints, tool marks, tire tread, etc.) found at crime scenes, detection/recovery techniques in the field and examinations in the lab and beyond to include the courtroom. Students will have practical hands-on applications (casting, lifts, etc.) with the collection techniques used in the field and lab environment. This will aid the student in developing tools and technologies to enhance their abilities to identify, document, collect and preserve impression evidence. This course is offered online in fall term and on-campus in spring term.

10504159 Crash Scene Investigation (3 cr.)

Teaches the importance of crash scene management as a crime scene management application. Students are exposed to response, recognition, documentation, collection and preservation of evidence techniques. Topics include reports, legal aspects, manual and laser measuring techniques, plotting methods, manual and computer-aided diagramming, evidence collection, approach speed, approach angle, crush evaluation, departure angle, drag factor, percent braking, post-collision speed, scrape, skid, test skids, etc.

10504168 Property/Evidence Management (2 cr.)

Focuses on the applications of all forms of property and evidence management systems that include a number of key stages from the piece of property/evidence's acquisition to its eventual disposal. Students will learn versatile time saving tools for managing property, evidence, and equipment through warehousing and inventory control. Develop formal standards for the management, administration, handling of property/evidence and benchmark references specific to the initial property/evidence handling procedures and life time standards for an organization.

10504178 CCI: Investigating Internet Crime (2 cr.)

Provides students with an understanding of the nature of crimes being committed on the Internet and the skills necessary to successfully investigate Internet-related crime. Students will learn various investigative techniques, protocols and technical tools necessary to identify offenders and acquire evidence to build a prosecutable case.

Course Descriptions

10504180 Forensic Science Capstone (3 cr.)	Integrates all the individual skills students learned in previous classes to allow them to process a crime scene. Students will be expected to achieve a basic knowledge of how to record and document, collect, protect and defend the credibility of evidence.
10504205 Writing Reports (3 cr.)	Explain the context of report writing, take effective field notes, organize information in reports, write narratives, describe what information should be included in certain types of reports, prepare for court, describe how to be an effective witness, and testify as a witness in court.
10504208 Criminal Procedures (3 cr.)	Identify basic concepts of criminal law; analyze facts, circumstances, and situations and determine which crimes against persons have been committed; analyze facts, circumstances, and situations and determine which crimes against property have been committed; and analyze facts, circumstances, and situations and determine which crimes involving drugs, alcohol or other criminal activity have been committed.
10504209 Juvenile Procedures (3 cr.)	Describe the juvenile justice system; describe how juveniles in need of protection or services or delinquent are handled; identify constitutional law issues relevant to juveniles; analyze the role of law enforcement and other agencies in responding to and investigating child maltreatment; and recognize the unique investigative issues for missing children.
10504211 Constitutional Principles (3 cr.)	Diagram the structure of the criminal justice system; identify when constitutional rules apply; identify the elements of a lawful arrest; identify the requirements for search warrants, and when warrantless searches are permitted; identify the requirements governing confessions and statements; and analyze the requirements for evidence to be admissible in court.
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.

Course Descriptions

10804135 Quantitative Reasoning (3 cr.) This course is intended to develop analytic reasoning and the ability to solve quantitative problems. Topics to be covered may include: construction & interpretation of graphs; descriptive statistics; geometry & spatial visualizations; math of finance; functions and modeling; probability; and logic. Appropriate use of units and dimensions, estimates, mathematical notation, and available technology will be emphasized throughout the course.

10806189 Basic Anatomy (3 cr.) Examines basic concepts of human anatomy and physiology. Learners explore the structure and function of all body systems.

10809103 Think Critically & Creatively (3 cr.) Provides instruction about critical and creative thinking that is in high demand in all occupations. Models, theories, and processes provide the foundation for learning logical thinking strategies. Students will apply a systematic approach to problem solving by analyzing the problem, assessing possible solutions, and making effective decisions. In addition, students will generate ideas and analyze complex issues. This course assists students with developing a critical thinking mindset which is essential at every level of personal and professional life.

10809198 Intro to Psychology (3 cr.) This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.

504 - Criminal Private Investigation Specialist

10504110 Introduction to Forensic Science (3 cr.) Explores the applications of science in the field of crime scene management from the crime scene to the courtroom and beyond. Students will focus on the examination and reconstruction of various crime scenes with the emphasis on the identification, collection, documentation and preservation of physical evidence.

10504142 Private Investigations, Introduction to (3 cr.) A study of investigations in the private and corporate sectors. Topics include investigative techniques relating to open record laws and searches, techniques of surveillance, employee screening, evidence collection, insurance fraud investigations, interviewing techniques, sources of information, and computer and other technology used in research. Applicable state statutes of attendees will be researched, and licensing requirements discussed.

10504148 Asset Protection, Principles of (3 cr.) Studies issues relating to workplace violence, employee theft, computer security, consumer fraud, supply chain security, environmental compliance, loss prevention, business disaster recovery, substance abuse, negligent hiring and other relevant issues.

Course Descriptions

- 10504205 Writing Reports (3 cr.)** Explain the context of report writing, take effective field notes, organize information in reports, write narratives, describe what information should be included in certain types of reports, prepare for court, describe how to be an effective witness, and testify as a witness in court.
- 10504208 Criminal Procedures (3 cr.)** Identify basic concepts of criminal law; analyze facts, circumstances, and situations and determine which crimes against persons have been committed; analyze facts, circumstances, and situations and determine which crimes against property have been committed; and analyze facts, circumstances, and situations and determine which crimes involving drugs, alcohol or other criminal activity have been committed.
- 10801136 English Composition 1 (3 cr.)** Learners develop and apply skills in all aspects of the writing process. Through a variety of learning activities and written documents, learners employ rhetorical strategies, plan, organize and revise content, apply critical reading strategies, locate and evaluate information, integrate and document sources, and apply standardized English language conventions.

504 - Criminal Security Management

- 10102112 Business, Introduction to (3 cr.)** Provides an overview of the variety of activities in the world of business. It focuses on the responsibilities connected with operating a business from both organizational and managerial viewpoints. It also examines the role of government in business.
- 10196191 Supervision (3 cr.)** Uses a practical approach to training people in the basics of supervision and management. This course emphasizes the application of theory and covers management functions, the skills needed to perform those functions, the history of management, contemporary management trends, ethics, communication and total quality management.
- 10504123 Security Law (3 cr.)** Examines the legal principles applicable to the security field. Included are the legal topics of negligence, intentional torts, agency and business liability for 3rd party acts. In addition, the student will learn about probable cause, arrest, search and seizure, and interrogation from a private security perspective.
- 10504147 Industrial Security (3 cr.)** Provides an examination of security requirements and responsibilities of the security professional for the private sector employer/manufacturer. An in-depth study of employee access control, employee theft, staffing, risk management, internal and external controls, fire control systems, asset protection and work place violence are just a few areas that will be examined.

Course Descriptions

10504187 Homeland Security Management (3 cr.)

Introduces students to the Department of Homeland Security at the federal, state and local level. The management application of responsibilities and resources of various homeland security components related private security and public safety will be studied using actual case analysis.

508 - Dental Assistant

10508101 Dental Health Safety (1 cr.)

Prepares dental auxiliary students to respond proactively to dental emergencies, control infection, prevent disease, adhere to OSHA Standards, and safely manage hazardous materials. Students also take patient vital signs and collect patient medical/dental histories. This course is a WTCS aligned course required in both the Dental Hygienist and Dental Assisting programs.

10508103 Dental Radiography (2 cr.)

Prepares dental auxiliary students to operate radiographic equipment and expose bitewing, periapical, extra oral, and occlusal images. Emphasis is placed on protection against x-ray hazards. Students also produce, mount, and evaluate dental images for diagnostic value. This course also provides the background in radiographic theory required for students to make informed decisions and adjustments.

10508113 Dental Materials (2 cr.)

Prepares dental auxiliary students to handle and prepare dental materials such as liners, bases, cements, amalgam, resin restorative materials, gypsum products, and impression materials. They also learn to take alginate impressions on manikins and clean removable appliances. This course is aligned to serve students in the Dental Hygienist and Dental Assistant programs.

10508120 Dental Office Management (2 cr.)

Prepares dental auxiliary students to manage telephones, appointments, recall systems, and inventory. Students also develop the skills needed to process accounts receivable and payable, collections, and third-party reimbursements. Students use dental software programs.

10801196 Oral/Interpersonal Comm (3 cr.)

Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.

31508302 Dental Chairside (5 cr.)

Prepares dental assistant students to chart oral cavity structures, dental pathology, and restorations and to assist a dentist with basic dental procedures including examinations, pain control, amalgam restoration, and cosmetic restoration. Students will also develop the ability to educate patients about preventive dentistry, brushing and flossing techniques, and dental procedures, using lay terminology. Throughout the course, students will apply decoding strategies to the correct use and interpretation of dental terminology.

Course Descriptions

31508304 Dental & General Anatomy (2 cr.)	Prepares dental assistant students to apply fundamentals of general and dental anatomy to informed decision-making and to professional communication with colleagues and patients.
31508306 Dental Assistant Clinical (3 cr.)	Students apply skills developed in Dental and General Anatomy, Dental Health Safety, Dental Chairside, Dental Materials, Dental Radiography, and Professionalism in a clinical setting with patients. Emphasizes integration of core abilities and basic occupational skills.
31508307 Dental Assistant Professional (1 cr.)	Prepares dental assistant students for entering the workforce. Students develop professional appearance and prepare a resume, cover letter, and professional development plan. Students learn to work within ethical guidelines and legal frameworks.
31508308 Dental Chairside - Advanced (5 cr.)	Prepares Dental Assistant students to adapt chairside skills to assisting with dental specialties as they are performed in general practice. Focuses on pediatric dentistry, orthodontics, oral maxillofacial surgery, endodontics, periodontics and prosthodontics. Students will also develop the ability to assist with sealants, perform coronal polishing, and apply topical fluoride and topical anesthetics.
31508309 Dental Laboratory Procedures (4 cr.)	Prepares Dental Assistant students to produce alginate impressions and fabricate diagnostic models, oral appliances, temporary restorations, and custom trays. Students also polish oral appliances.
31508310 Dental Radiography - Advanced (1 cr.)	Builds on principles and skills developed in Dental Radiography. Dental Assisting students produce full mouth series, extra-oral and specialized images on adult and child patients. Emphasis is placed on protection against radiation exposure risks. Students will also produce, mount, and evaluate images of diagnostic quality. In addition, they will use images to explain dental health and treatment plans to patients.
31508311 Dental Assistant Clinical - Adv (2 cr.)	Dental Assisting students apply skills developed in Dental Chairside - Advanced, Dental Lab Procedures, Dental Radiography - Advanced, and Dental Office Management in a clinical setting with patients. Emphasizes integration of core abilities and basic and advanced occupational skills.
508 - Dental Hygienist	
10508101 Dental Health Safety (1 cr.)	Prepares dental auxiliary students to respond proactively to dental emergencies, control infection, prevent disease, adhere to OSHA Standards, and safely manage hazardous materials. Students also take patient vital signs and collect patient medical/dental histories. This course is a WTCS aligned course required in both the Dental Hygienist and Dental Assisting programs.

Course Descriptions

10508102 Oral Anatomy, Embry, Histology (4 cr.)	Prepares Dental Hygienist students to apply detailed knowledge about oral anatomy to planning, implementation, assessment, and evaluation of patient care. Students identify distinguishing characteristics of normal and abnormal dental, head, and neck anatomy and its relationship to tooth development, eruption, and health.
10508103 Dental Radiography (2 cr.)	Prepares dental auxiliary students to operate radiographic equipment and expose bitewing, periapical, extra oral, and occlusal images. Emphasis is placed on protection against x-ray hazards. Students also produce, mount, and evaluate dental images for diagnostic value. This course also provides the background in radiographic theory required for students to make informed decisions and adjustments.
10508105 Dental Hygiene Process 1 (4 cr.)	Introduces Dental Hygiene students to the basic technical/clinical skills required of practicing Dental Hygienists including use of basic dental equipment, examination of patients, and procedures within the dental unit. Under the direct supervision of an instructor, students integrate hands-on skills with entry-level critical thinking and problem-solving skills. The course also reinforces the application of Dental Health Safety skills.
10508106 Dental Hygiene Process 2 (4 cr.)	This clinical course builds on and expands the technical/clinical skills student dental hygienists began developing in Dental Hygiene Process 1. Under the direct supervision of an instructor, students apply patient care assessment, planning, implementation, and evaluation skills to provide comprehensive care for calculus case type 1 and 2 patients and perio case patients. Dental Hygiene Process 2 introduces the application of fluoride and desensitizing agents, whole mouth assessments, comprehensive periodontal examinations, application of sealants, and patient classification. Students also begin performing removal of supragingival stain, dental plaque, calcified accretions, and deposits. In addition, they gain further experience in exposing radiographs on patients. The course also reinforces the application of Dental Health Safety skills.
10508107 Dental Hygiene Ethics & Professionalism (1 cr.)	Helps student dental hygienists develop and apply high professional and ethical standards. Students apply the laws that govern the practice of dental hygiene to their work with patients, other members of a dental team and the community. Emphasis is placed on maintaining professionalism which includes confidentiality and informed consent.

Course Descriptions

10508108 Periodontology (3 cr.)	This course prepares student dental hygienists to assess the periodontal health of patients, plan prevention and treatment of periodontal disease, and to evaluate the effectiveness of periodontal treatment plans. Emphasis is placed on the recognition of the signs and causes of periodontal disease and on selection of treatments modalities that minimize risk and restore periodontal health.
10508109 Cariology (1 cr.)	This course focuses on the characteristics and contributing factors of dental decay. Dental Hygiene students help patients minimize caries risk by developing treatment plans, communicating methods to patients, and evaluating treatment results.
10508110 Nutrition and Dental Health (2 cr.)	Prepares student dental hygienists to counsel patients about diet and its impact on oral health. Students learn to distinguish between balanced and unbalanced diets and to construct diets that meet the needs of patients with compromised dental/oral health. Students also learn to counsel patients about the effect of eating disorders on dental health.
10508111 General & Oral Pathology (3 cr.)	This course prepares the student dental hygienist to determine when to consult, treat or refer clients with various disease, infection or physiological conditions. Students learn to recognize the signs, causes, and implications of common pathological conditions including inflammatory responses, immune disorders, genetic disorders, developmental disorders of tissues and cysts, oral tissue trauma, and neoplasm of the oral cavity.
10508112 Dental Hygiene Process 3 (5 cr.)	This clinical course builds on and expands the technical/clinical skills student dental hygienists developed in Dental Hygiene Process 2. In consultation with the instructor, students apply independent problem-solving skills in the course of providing comprehensive care for calculus case type 1, 2, and 3 patients and case type 0, I, II, and III patients. Dental Hygiene Process 3 introduces root detoxification using hand and ultra-sonic instruments, laser bacterial reduction, selection of dental implant prophylaxis treatment options, and administration of chemotherapeutic agents. Students also adapt care plans in order to accommodate patients with special needs.
10508113 Dental Materials (2 cr.)	Prepares dental auxiliary students to handle and prepare dental materials such as liners, bases, cements, amalgam, resin restorative materials, gypsum products, and impression materials. They also learn to take alginate impressions on manikins and clean removable appliances. This course is aligned to serve students in the Dental Hygienist and Dental Assistant programs.

Course Descriptions

10508114 Dental Pharmacology (2 cr.)	Prepares student dental hygienists to select safe and effective patient premedication and within the scope of dental hygiene practice. Students will also learn to recognize potential pharmacological contraindications for specific patients and to take measures to avoid negative impact or alert other members of the dental team to possible negative impact.
10508115 Community Dental Health (2 cr.)	This course prepares the Dental Hygienist student to play a proactive role in improving the dental health of community members of all ages. Students perform and interpret dental health research to determine community dental health needs.
10508117 Dental Hygiene Process 4 (4 cr.)	This clinical course builds on and expands the technical/clinical skills student dental hygienists developed in Dental Hygiene Process 3. With feedback from the instructor, students manage all aspects of cases in the course of providing comprehensive care for calculus case type 0, 1, 2, and 3 patients and for case type 0 I, II, and III patients. Emphasizes maximization of clinical efficiency and effectiveness. Prepares student dental hygienists to demonstrate their clinical skills in a formal examination situation.
10508118 Dental Anxiety and Pain Management (2 cr.)	This course prepares the student dental hygienist to work within the scope of dental hygiene practice to manage anxiety and pain for dental patients. Students learn to prepare and administer local anesthesia and nitrous oxide safely. The course also addresses the recommendation of alternative pain control measures.
10508130 Dental Hygiene, Transition into Practice (1 cr.)	Prepares students for the written licensing and clinical practice examinations. It includes simulated, written and practical exams; an individualized study plan; stress/test anxiety management strategies; and dental hygiene licensing.
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.

Course Descriptions

- 10806177 Gen Anatomy & Physiology (4 cr.)** Examines basic concepts of human anatomy and physiology as they relate to health sciences. Using a body systems approach, the course emphasizes the interrelationships between structure and function at the gross and microscopic levels of organization of the entire human body. It is intended to prepare health care professionals who need to apply basic concepts of whole body anatomy and physiology to informed decision-making and professional communication with colleagues and patients. (This course also provides the foundation, and is prerequisite to, Advanced Anatomy and Physiology.)
- 10806186 Intro to Biochemistry (4 cr.)** Provides students with skills and knowledge of organic and biological chemistry necessary for application within Nursing and other Allied Health careers. Emphasis is placed on recognizing the structure, physical properties and chemical reactions of organic molecules, body fluids, and acids. Additional emphasis is placed on biological functions and their relationships to enzymes, proteins, lipids, carbohydrates and DNA.
- 10806197 Microbiology (4 cr.)** Examines microbial structure, metabolism, genetics, growth and the relationship between humans and microbes. Addresses disease production, epidemiology, host defense mechanisms and the medical impact of microbes. Presents the role of microbes in the environment, industry, and biotechnology.
- 10809188 Developmental Psychology (3 cr.)** Developmental Psychology is the study of human development throughout the lifespan. This course explores developmental theory and research with an emphasis on the interactive nature of the biological, cognitive, and psychosocial changes that affect the individual conception to death. Application activities and critical thinking skills will enable students to gain an increased knowledge and understanding of themselves and others.
- 10809196 Intro to Sociology (3 cr.)** Introduces students to the fundamental sociological concepts, including sociological perspectives, research methods, the significance of culture in society, and the socialization process. Other topics include deviance, the impact of groups on behavior, societal inequities, global changes, the role of social institutions, and social stratification.
- 10809198 Intro to Psychology (3 cr.)** This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.

509 - Medical Healthcare Customer Service Representative

Course Descriptions

10501107 Digital Literacy for Healthcare (2 cr.) The focus of this course is the use of technology in healthcare. Learners use common business software applications, including word processing, presentation, spreadsheet, and databases. Communication methods using technology are addressed. Learners gain experience with using the electronic health record (EHR). Healthcare EHR security issues, social media use, and digital healthcare resources are examined.

31501301 Med Terminology (3 cr.) Focuses on the component parts of medical terms: prefixes, suffixes and word roots. Students practice formation, analysis and reconstruction of terms. Emphasis on spelling, definition and pronunciation. Introduction to operative, diagnostic, therapeutic and symptomatic terminology of all body systems, as well as systemic and surgical terminology.

31501304 Contemporary Practices in Healthcare (2 cr.) An introduction to contemporary healthcare practices for students interested in a career serving diverse healthcare communities. Learners explore the essential skills required for equitable and inclusive person-centered interactions. Learners examine various health communities, mindful practices, professionalism, problem solving, and patient confidentiality.

509 - Medical Medical Assistant

10501107 Digital Literacy for Healthcare (2 cr.) The focus of this course is the use of technology in healthcare. Learners use common business software applications, including word processing, presentation, spreadsheet, and databases. Communication methods using technology are addressed. Learners gain experience with using the electronic health record (EHR). Healthcare EHR security issues, social media use, and digital healthcare resources are examined.

31501301 Med Terminology (3 cr.) Focuses on the component parts of medical terms: prefixes, suffixes and word roots. Students practice formation, analysis and reconstruction of terms. Emphasis on spelling, definition and pronunciation. Introduction to operative, diagnostic, therapeutic and symptomatic terminology of all body systems, as well as systemic and surgical terminology.

31501304 Contemporary Practices in Healthcare (2 cr.) An introduction to contemporary healthcare practices for students interested in a career serving diverse healthcare communities. Learners explore the essential skills required for equitable and inclusive person-centered interactions. Learners examine various health communities, mindful practices, professionalism, problem solving, and patient confidentiality.

Course Descriptions

31509301 Medical Asst Admin Procedures (2 cr.)	Introduces medical assistant students to office management, business administration, and the electronic medical record (EMR) in the medical office. Students learn to schedule appointments, perform filing, record keeping, telephone and reception duties, communicate effectively with patients and other medical office staff, and keep an inventory of supplies.
31509302 Human Body in Health & Disease (3 cr.)	Students learn to recognize human body structure and function in health and disease states. Students explore the causes, signs, and symptoms of diseases of the major body systems as well as the diagnostic procedures, usual treatment, prognosis, and prevention of diseases commonly diagnosed and treated in the medical office setting.
31509303 Medical Asst Lab Procedures 1 (2 cr.)	Introduces medical assistant students to laboratory procedures commonly performed by medical assistants in a medical office setting. Students perform Clinical Laboratory Improvement Amendment (CLIA) waived routine laboratory procedures commonly performed in the ambulatory care setting. Students follow laboratory safety requirements and federal regulations while performing specimen collection and processing, microbiology and urinalysis testing.
31509304 Medical Asst Clin Procedures 1 (4 cr.)	Introduces medical assistant students to the clinical procedures performed in the medical office setting. Students perform basic examining room skills including screening, vital signs, patient history, minor surgery and patient preparation for routine and specialty exams in the ambulatory care setting. Learner explores communication principles and psychology theories related to patient care.
31509305 Medical Asst Lab Procedures 2 (2 cr.)	Prepares students to perform phlebotomy and Clinical Laboratory Improvement Amendment (CLIA) waived hematology, chemistry, immunology and laboratory procedures commonly performed by medical assistants in the ambulatory care setting.
31509306 Medical Asst Clin Procedures 2 (3 cr.)	Prepares medical assistant students to perform patient care skills in the medical office setting. Students perform clinical procedures including administering medications, performing an electrocardiogram, assisting with respiratory testing, coaching patients, and assisting with emergency situations in an ambulatory care setting. Students learn preventive care and principles of nutrition.
31509307 Med Office Insurance & Finance (2 cr.)	Introduces medical assistant students to health insurance and finance in the medical office. Students perform bookkeeping procedures, apply managed care guidelines, and complete insurance claim forms. Students use medical coding and managed care terminology to perform insurance-related duties.

Course Descriptions

- 31509308 Pharm for Allied Health (2 cr.)** Introduces students to medication classification, basic pharmacology principles, and supplements. Students apply basic pharmacodynamics to identify common medications and calculate dosages in preparation for medication administration.
- 31509309 Medical Law, Ethics & Profess (2 cr.)** Prepares students to display professionalism and perform within ethical and legal boundaries in the health care setting. Students maintain confidentiality, examine legal aspects of ambulatory healthcare, perform quality improvement procedures, examine legal and bioethical issues, and demonstrate awareness of diversity.
- 31509310 Medical Assistant Practicum (3 cr.)** Requires medical assistant students to integrate and apply knowledge and skills from all previous medical assistant courses in actual ambulatory health care settings. Learners perform medical assistant administrative, clinical, and laboratory duties under the supervision of trained mentors to effectively transition to the role of a medical assistant. This is a supervised, unpaid, clinical experience. CAAHEP/MAERB required Practicum - 160 minimum hours up to 216 hours.

510 - Medical Licensed Practical Nurse (PN) Refresher

- 47543402 LPN Refresher-Skills & Theory Review (4 cr.)** Provides the LPN refresher student time to practice and refresh on basic nursing skills utilized. An independent theory review will include the nursing process, infection control, medication update, recent trends, the aging population, communication, documentation and reporting, and scope of practice. A valid Wisconsin LPN license or temporary permit for educational purposes; current CPR for licensed professional which must remain current until completion of the course; health requirement must be met; copy of caregiver background check required.

- 47543403 LPN Refresher-Precepted Clinical (3 cr.)** LPN refresher students will complete 108 hours of precepted clinical experience. Students must complete 47-543-402 prior to starting this course. A valid Wisconsin LPN license or temporary permit for educational purposes; current CPR for licensed professional which must remain current until completion of the course; health requirement must be met; and a copy of caregiver background check required.

510 - Medical Registered Nurse (RN) Refresher

Course Descriptions

47543404 RN Refresher-Skills & Theory Review (4 cr.) Provides the RN refresher student time to practice and refresh on basic nursing skills utilized. An independent theory review will include the nursing process, infection control, medication update, recent trends, the aging population, communication, documentation and reporting, and scope of practice. A valid Wisconsin RN license or temporary permit for educational purposes; current CPR for licensed professional which must remain current until completion of the course; health requirement must be met and a copy of caregiver background check required.

47543405 RN Refresher-Precepted Clinical (3 cr.) RN refresher students will complete 108 hours of precepted clinical experience. Students must complete 47-543-404 prior to starting this course. A valid Wisconsin RN license or temporary permit for educational purposes; current CPR for licensed professional which must remain current until completion of the course; health requirement must be met and a copy of caregiver background check required.

512 - Surgical Surgical Technology

10501101 Medical Terminology (3 cr.) Focuses on the component parts of medical terms: prefixes, suffixes and word roots. Students practice formation, analysis and reconstruction of terms. Emphasis on spelling, definition and pronunciation. Introduction to operative, diagnostic, therapeutic and symptomatic terminology of all body systems, as well as systemic and surgical terminology.

10512125 Intro to Surgical Technology (4 cr.) Provides the foundational knowledge of the occupational environment. Principles of sterilization and disinfection are learned. Surgical instruments are introduced. Preoperative patient care concepts are simulated. Lab practice is included.

10512126 Surgical Tech Fundamentals 1 (4 cr.) Focuses on preparing the patient and operating room for surgery. Principles of sterile technique are emphasized as the student moves into the scrub role. Lab practice is included.

10512127 Exploring Surgical Issues (2 cr.) Explores a variety of issues related to surgical technology. Emphasis is placed on becoming a professional member of the surgical team.

10512128 Surgical Tech Fundamentals 2 (4 cr.) Focuses on enhancing surgical technology skills while functioning as a sterile team member. Lab is included.

10512129 Surgical Pharmacology (2 cr.) Basic study of drug classifications, care, and handling of drugs and solutions, application of mathematical principles in dosage calculations, terminology related to pharmacology, anesthesia, and drugs used in surgery.

10512130 Surgical Skills Application (2 cr.) Provides a transition from the academic to the clinical setting. Learners integrate the surgical technologist skills as they apply to various surgical procedures.

10512131 Surgical Interventions 1 (4 cr.) Provides the foundational knowledge of surgical core and specialty procedures. Examines the pathophysiology, diagnostic interventions, health sciences, and surgical techniques for a variety of procedures.

Course Descriptions

10512132 Surgical Technology Clinical 1 (3 cr.)	Apply basic surgical theories, principles, and procedural techniques in the operating room. Students begin to function as team members under the guidance of the instructor and authorized clinical personnel.
10512133 Surgical Technology Clinical 2 (3 cr.)	Further experience in a clinical setting allows the student to continue to improve technical skills while accepting more responsibilities during surgical procedures.
10512135 Surgical Technology Clinical 3 (3 cr.)	Further experience in a clinical setting allows the student to continue to improve technical skills while accepting more responsibilities during surgical procedures.
10512136 Surgical Technology Clinical 4 (3 cr.)	During this clinical course the student will function relatively independently. Serves as a transition from a student perspective to an employee by utilizing advanced skills for an entry level Surgical Technologist.
10512142 Surgical Interventions II (4 cr.)	Expands knowledge of core and specialty surgical procedures by incorporating pathophysiology, diagnostic interventions, health sciences, and surgical techniques.
10801136 English Composition 1 (3 cr.)	Learners develop and apply skills in all aspects of the writing process. Through a variety of learning activities and written documents, learners employ rhetorical strategies, plan, organize and revise content, apply critical reading strategies, locate and evaluate information, integrate and document sources, and apply standardized English language conventions.
10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
10806177 Gen Anatomy & Physiology (4 cr.)	Examines basic concepts of human anatomy and physiology as they relate to health sciences. Using a body systems approach, the course emphasizes the interrelationships between structure and function at the gross and microscopic levels of organization of the entire human body. It is intended to prepare health care professionals who need to apply basic concepts of whole body anatomy and physiology to informed decision-making and professional communication with colleagues and patients. (This course also provides the foundation, and is prerequisite to, Advanced Anatomy and Physiology.)
10806197 Microbiology (4 cr.)	Examines microbial structure, metabolism, genetics, growth and the relationship between humans and microbes. Addresses disease production, epidemiology, host defense mechanisms and the medical impact of microbes. Presents the role of microbes in the environment, industry, and biotechnology.

Course Descriptions

10809196 Intro to Sociology (3 cr.)	Introduces students to the fundamental sociological concepts, including sociological perspectives, research methods, the significance of culture in society, and the socialization process. Other topics include deviance, the impact of groups on behavior, societal inequities, global changes, the role of social institutions, and social stratification.
10809198 Intro to Psychology (3 cr.)	This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.
513 - Laboratory Medical Laboratory Assistant	
10501101 Medical Terminology (3 cr.)	Focuses on the component parts of medical terms: prefixes, suffixes and word roots. Students practice formation, analysis and reconstruction of terms. Emphasis on spelling, definition and pronunciation. Introduction to operative, diagnostic, therapeutic and symptomatic terminology of all body systems, as well as systemic and surgical terminology.
10501153 Body Structure and Function (2 cr.)	Introduces basic anatomy and physiology of the human body. Students explore the basics of cells and cell chemistry and build on that knowledge to develop an understanding of tissues, organs, and organ systems. Students explore each body system and how systems function under normal (homeostatic) body conditions. Students develop an overall understanding of how the human body operates on a minute to minute, day to day, basis when all systems are functioning properly.
10513110 Basic Lab Skills (1 cr.)	Explores laboratory science career options and the fundamental principles and procedures performed in the laboratory. You will utilize medical terminology and basic laboratory equipment. You will follow required safety and infection control procedures and perform simple laboratory tests.
10513111 Phlebotomy (2 cr.)	Provides opportunities for learners to perform routine venipuncture, routine capillary puncture and special collection procedures.
10513113 QA Lab Math (1 cr.)	Focuses on performing the mathematical calculations routinely used in laboratory settings. You will explore the concepts of quality control and quality assurance in the laboratory.
10513117 Advanced Lab Skills (2 cr.)	Explores principles and hands on procedures performed in the clinical laboratory. You will perform quality control and utilize basic laboratory equipment to perform patient laboratory testing.
10513118 Medical Laboratory Assistant Clinical (3 cr.)	Learn to prepare blood specimen collection and specimen processing in a clinical setting.

Course Descriptions

31501304 Contemporary Practices in Healthcare (2 cr.)

An introduction to contemporary healthcare practices for students interested in a career serving diverse healthcare communities. Learners explore the essential skills required for equitable and inclusive person-centered interactions. Learners examine various health communities, mindful practices, professionalism, problem solving, and patient confidentiality.

513 - Laboratory Medical Laboratory Technician

10501101 Medical Terminology (3 cr.)

Focuses on the component parts of medical terms: prefixes, suffixes and word roots. Students practice formation, analysis and reconstruction of terms. Emphasis on spelling, definition and pronunciation. Introduction to operative, diagnostic, therapeutic and symptomatic terminology of all body systems, as well as systemic and surgical terminology.

10513109 Blood Bank (4 cr.)

Focuses on blood banking concepts and procedures including blood typing, compatibility testing, work ups for adverse reaction to transfusions, disease states and donor activities.

10513110 Basic Lab Skills (1 cr.)

Explores laboratory science career options and the fundamental principles and procedures performed in the laboratory. You will utilize medical terminology and basic laboratory equipment. You will follow required safety and infection control procedures and perform simple laboratory tests.

10513111 Phlebotomy (2 cr.)

Provides opportunities for learners to perform routine venipuncture, routine capillary puncture and special collection procedures.

10513113 QA Lab Math (1 cr.)

Focuses on performing the mathematical calculations routinely used in laboratory settings. You will explore the concepts of quality control and quality assurance in the laboratory.

10513114 Urinalysis (2 cr.)

Prepares you to perform a complete urinalysis which includes physical, chemical and microscopic analysis. You will explore renal physiology and correlate urinalysis results with clinical conditions.

10513115 Basic Immunology Concepts (2 cr.)

Provides an overview of the immune system including laboratory testing methods for diagnosis of immune system disorders, viral and bacterial infections.

10513116 Clinical Chemistry (4 cr.)

Introduces clinical chemistry techniques and procedures for routine analysis using photometric, potentiometric and separation techniques. Topics in this course include pathophysiology and methodologies for carbohydrate, lipids, proteins, renal function and blood gas analysis. Additional topics include hepatic, cardiac markers, tumor markers, endocrine function, miscellaneous body fluids, toxicology, enzymes and electrolytes.

Course Descriptions

- 10513120 Basic Hematology (3 cr.)** Covers the theory and principles of blood cell production and function, and introduces you to basic practices and procedures in the hematology laboratory.
- 10513121 Coagulation (1 cr.)** Introduces the theory and principles of coagulation and explores mechanisms involved in coagulation disorders. Emphasis is placed upon laboratory techniques used to diagnose disease and monitor treatment.
- 10513130 Advanced Hematology (2 cr.)** Explores mechanisms involved in the development of hematological disorders. Emphasis is placed upon laboratory techniques used to diagnose disorders and monitor treatment.
- 10513133 Clinical Microbiology (4 cr.)** Presents the clinical importance of infectious diseases with emphasis upon the appropriate collection, handling and identification of clinically relevant bacteria. Disease states, modes of transmission and methods of prevention and control, including antibiotic susceptibility testing, will also be discussed.
- 10513140 Advanced Microbiology (2 cr.)** Provides an overview of acid fast organisms, fungi, parasites, and anaerobic bacteria. The organisms, their pathophysiology, epidemiology, the diseases and conditions that they cause, laboratory methods of handling, culturing and identification will be discussed.
- 10513151 Clinical Experience 1 (3 cr.)** Practice the principles and procedures of laboratory medicine as an entry level Medical Laboratory Technician (MLT) in a clinical laboratory setting. Working alongside laboratory professionals, you will collect and process specimens, operate laboratory analyzers and instruments and report results in a Laboratory Information Systems.
- 10513152 Clinical Experience 2 (4 cr.)** Provides continuing practice for the principles and procedures of laboratory medicine as an entry level Clinical Laboratory Technician in a clinical laboratory setting. You will learn to operate state of the art instruments and report results on Laboratory Information Systems.
- 10513170 Introduction to Molecular Diagnostics (2 cr.)** Introduces the principles and application of molecular diagnostics in the clinical laboratory.
- 10801195 Written Communication (3 cr.)** Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
- 10801196 Oral/Interpersonal Comm (3 cr.)** Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.

Course Descriptions

10806177 Gen Anatomy & Physiology (4 cr.) Examines basic concepts of human anatomy and physiology as they relate to health sciences. Using a body systems approach, the course emphasizes the interrelationships between structure and function at the gross and microscopic levels of organization of the entire human body. It is intended to prepare health care professionals who need to apply basic concepts of whole body anatomy and physiology to informed decision-making and professional communication with colleagues and patients. (This course also provides the foundation, and is prerequisite to, Advanced Anatomy and Physiology.)

10806186 Intro to Biochemistry (4 cr.) Provides students with skills and knowledge of organic and biological chemistry necessary for application within Nursing and other Allied Health careers. Emphasis is placed on recognizing the structure, physical properties and chemical reactions of organic molecules, body fluids, and acids. Additional emphasis is placed on biological functions and their relationships to enzymes, proteins, lipids, carbohydrates and DNA.

10806197 Microbiology (4 cr.) Examines microbial structure, metabolism, genetics, growth and the relationship between humans and microbes. Addresses disease production, epidemiology, host defense mechanisms and the medical impact of microbes. Presents the role of microbes in the environment, industry, and biotechnology.

10809166 Intro to Ethics: Theory & App (3 cr.) This course provides a basic understanding of the theoretical foundations of ethical thought. Diverse ethical perspectives will be used to analyze and compare relevant issues. Students will critically evaluate individual, social and professional standards of behavior, and apply a systematic decision-making process to these situations.

10809198 Intro to Psychology (3 cr.) This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.

513 - Laboratory Phlebotomy

10513110 Basic Lab Skills (1 cr.) Explores laboratory science career options and the fundamental principles and procedures performed in the laboratory. You will utilize medical terminology and basic laboratory equipment. You will follow required safety and infection control procedures and perform simple laboratory tests.

10513111 Phlebotomy (2 cr.) Provides opportunities for learners to perform routine venipuncture, routine capillary puncture and special collection procedures.

Course Descriptions

514 - Occupational Therapy Occupational Therapy Assistant

10514171 Introduction to Occupational Therapy (3 cr.)	Provides an overview of history, philosophy, ethics, and scope of occupational therapy practice. Examines legal responsibilities, professional resources, and organization. Students practice basic skills related to therapeutic relationships and determine their own suitability to a career in occupational therapy.
10514172 Medical and Psychosocial Conditions (3 cr.)	Introduces medical and psychosocial conditions as they relate to occupational therapy practice. Topics include etiology, symptomatology, treatment and contraindications.
10514173 Activity Analysis and Applications (2 cr.)	Provides instruction in activity analysis with hands on experience in activities across the lifespan. Students apply the teaching/learning process and adhere to safety regulations.
10514174 OT Performance Skills (4 cr.)	Emphasis on assessment in the areas of sensory perceptual skills, motor skills, and cognitive skills.
10514175 Psychosocial Practice (3 cr.)	Examines the role of the OTA in the service delivery to individuals affected by mental health conditions. Provides opportunity for development of skills related to psychosocial assessment and interventions.
10514176 OT Theory and Practice (3 cr.)	Examines the theoretical foundations that guide OT practice. Apply group dynamics and demonstrate leadership skills.
10514178 Geriatric Practice (3 cr.)	Examines the role of the OT in the service delivery to elders in a variety of settings. Includes analysis of the impact of age-related changes and disease processes on the function of the elderly.
10514179 Community Practice (2 cr.)	Explores practice options and interventions for occupation-based community practice. Students articulate the unique role of occupational therapy within the community.
10514184 OTA Fieldwork I (2 cr.)	Integrate classroom theory and practice into a Fieldwork Level I experience. Provides experiences to assist in the development of communication, professional and observational skills.
10514185 OTA Practice and Management (2 cr.)	Provides opportunities to practice clinical management skills, continuous quality improvement measurement, and administrative concepts and procedures. Students create a professional development plan.
10514186 OTA Fieldwork IIA (5 cr.)	Develop skills and behaviors necessary for entry-level occupational therapy assistant practice. Provides a different clinical practice setting than OTA Fieldwork IIB.
10514187 OTA Fieldwork IIB (5 cr.)	Develop skills and behaviors necessary for entry level occupational therapy assistant practice. Provides a different clinical practice setting than OTA Fieldwork IIA.

Course Descriptions

- 10514189 OT Physical Rehabilitation Practice (4 cr.)** Explores interventions relative to major physical disability diagnoses seen in OT practice. Evaluation, treatment interventions, assistive technology and documentation are emphasized relative to the biomechanical, neurodevelopmental and rehabilitative approaches to practice.
- 10514190 OT Pediatric Practice (4 cr.)** Explores interventions relative to major pediatric diagnoses seen in OT practice. Evaluation, treatment interventions, assistive technology and documentation are emphasized within the context of the child's occupations.
- 10801195 Written Communication (3 cr.)** Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
- 10801196 Oral/Interpersonal Comm (3 cr.)** Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
- 10806177 Gen Anatomy & Physiology (4 cr.)** Examines basic concepts of human anatomy and physiology as they relate to health sciences. Using a body systems approach, the course emphasizes the interrelationships between structure and function at the gross and microscopic levels of organization of the entire human body. It is intended to prepare health care professionals who need to apply basic concepts of whole body anatomy and physiology to informed decision-making and professional communication with colleagues and patients. (This course also provides the foundation, and is prerequisite to, Advanced Anatomy and Physiology.)
- 10809172 Introduction to Diversity Studies (3 cr.)** This course introduces the study of diversity from a local to a global perspective using a holistic, interdisciplinary approach that encourages exploration and prepares students to work in a diverse environment. The course introduces basic diversity concepts, examines the impact of bias and power differentials among groups, explores the use of culturally responsive communication strategies, and compares forces that shape diversity in an international context.

Course Descriptions

10809188 Developmental Psychology (3 cr.) Developmental Psychology is the study of human development throughout the lifespan. This course explores developmental theory and research with an emphasis on the interactive nature of the biological, cognitive, and psychosocial changes that affect the individual conception to death. Application activities and critical thinking skills will enable students to gain an increased knowledge and understanding of themselves and others.

10809198 Intro to Psychology (3 cr.) This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.

514 - Occupational Therapy Therapeutic Activity Specialist

10501107 Digital Literacy for Healthcare (2 cr.) The focus of this course is the use of technology in healthcare. Learners use common business software applications, including word processing, presentation, spreadsheet, and databases. Communication methods using technology are addressed. Learners gain experience with using the electronic health record (EHR). Healthcare EHR security issues, social media use, and digital healthcare resources are examined.

10809198 Intro to Psychology (3 cr.) This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.

30514301 Introduction to Activity Specialist (3 cr.) Outlines the role and responsibilities of the Activity Specialist. The student will explore service delivery models and organizations for the role of Activity Specialist. Ethical dilemmas will be explored and how the student may report them. Various professional forms of communication in this role will be demonstrated by the student through the course as well as obtaining relevant information from records.

30514302 Conditions Across the Lifespan (3 cr.) Explores various mental and physical conditions that may occur throughout the lifespan. Emphasis is placed on understanding how the condition may affect a person's ability to participate in activities and how activities can be adapted to allow for participation.

Course Descriptions

**30514303 Activity Program
Coordination (3 cr.)**

Focuses on the fundamentals of the Activity Specialist in development, implementation and coordination of various activities and events for individuals, groups and organizations. Learn organizational techniques as well as planning and scheduling, marketing, promoting activity events. The role of Activity Specialist in the area of leadership with personnel and volunteers will be addressed as well. Also explores the need for policy development, implementation, and follow through in the areas of safety and equipment to name a few.

30514304 Activity Facilitation I (3 cr.)

Learn the foundation skills necessary in order to plan, facilitate and evaluate group activities across the lifespan for clients living with physical, emotional, cognitive and sensory needs in community-based settings.

30514305 Activity Facilitation II (3 cr.)

Review the foundations skills learned in Activity Facilitation I and will have the opportunity to perform the skills of planning, facilitating and evaluating group activities in community-based settings.

**30514306 Activity Specialist Capstone
(2 cr.)**

Consult with a faculty member to develop a hands-on independent study in a service setting aligned with curriculum outcomes. The student will be evaluated on their performance of assuming the roles and responsibilities of an Activity Specialist in the context of the assigned setting.

**31801318 Communication, Applied (2
cr.)**

Focuses on technical vocabulary, business writing, job search strategies, interpersonal communication and oral presentation skills through individual and group activities. Open enrollment for all students. It is recommended, but not required, that the student have basic computer skills, HS GPA 2.75+ OR ACPL Read 54+/Sent 83+, Next Gen Read 250+/Sent 237+, ACT Read 18+/Engl 15+ OR Read Prep 10838105/Sent Prep 74851745 OR not pursuing a degree. Personal/professional development students who have not taken the ACCUPLACER test need to consult with their instructor during the first class.

520 - Human Gerontology

10544160 Health and Aging (1 cr.)

Provides an overview of wellness, exercise, sexuality, spirituality and nutrition as they relate to health and aging.

**10544161 Physical Aspects of Aging (1
cr.)**

Focuses on understanding the physical aspects of the aging process that are associated with elderly populations. Topics include hearing loss, visual impairments, mobility issues and specific diseases such as Parkinson's disease, stroke, arthritis and diabetes.

**10544162 Psychosocial Issues and
Aging (2 cr.)**

Examines the factors and relationships that affect the older adult. Participants explore a variety of topics such as Alzheimer's, depression and dealing with losses. It also covers elder abuse and drug and alcohol concerns.

Course Descriptions

10544163 Public Policy and Aging (1 cr.)	Introduces such concepts as elder law, advanced directives and funding sources including Medicare and Social Security. Students review federal, state and professional rights and responsibilities associated with working with an elderly population.
10544164 Community Resources for the Elderly (1 cr.)	Explores available community options and partnerships that serve the aging population. Access to transportation, housing, work and leisure activities is included.
10544165 Prevention/Safety Concerns for the Elderly (1 cr.)	Introduces environmental concerns such as protection from fire, prevention of falls, and medical concerns such as medication management and care provider issues. This is designed for people who are addressing the safety concerns of older adults.

520 - Human Services Assistant shared degree awarded by NTC

10550201 Understanding Substance Use (3 cr.)	Explore the bio-psych social dynamics of substance use. Examine treatment approaches, models, and screening criteria. Examine substances of abuse, history of SUDs, and their impact on the individual and society.
10550204 Group Facilitation (3 cr.)	An introduction to theory and practice of group dynamics and processes. Includes ethical considerations, effective group leadership, and stages of group development. Also includes demonstration of group facilitation skills, clinical documentation, co-facilitation strategies, reflective practitioner techniques, and group formation.
10550206 Introduction to Interviewing and Counseling Skills (3 cr.)	Analyze foundational skills in the counseling relationship. Analyze the stages of the helping processes and the roles professionals play in the processes. Analyze the importance of establishing therapeutic relationships. Apply basic counseling techniques. Apply interviewing and counseling skills through mock counseling sessions and personal experience reflections. Examine issues of boundaries and ethics.
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
10809188 Developmental Psychology (3 cr.)	Developmental Psychology is the study of human development throughout the lifespan. This course explores developmental theory and research with an emphasis on the interactive nature of the biological, cognitive, and psychosocial changes that affect the individual conception to death. Application activities and critical thinking skills will enable students to gain an increased knowledge and understanding of themselves and others.

Course Descriptions

10809198 Intro to Psychology (3 cr.)

This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.

520 - Human Human Services shared degree awarded by NTC

10550201 Understanding Substance Use (3 cr.)

Explore the bio-psych social dynamics of substance use. Examine treatment approaches, models, and screening criteria. Examine substances of abuse, history of SUDs, and their impact on the individual and society.

10550203 Overview of Mental Health Disorders (3 cr.)

Provides an overview to the history, diagnosis, treatment strategies, legal and ethical considerations, and documentation of mental health conditions. Focus is on understanding the mental health conditions that co-occur with substance use disorders.

10550204 Group Facilitation (3 cr.)

An introduction to theory and practice of group dynamics and processes. Includes ethical considerations, effective group leadership, and stages of group development. Also includes demonstration of group facilitation skills, clinical documentation, co-facilitation strategies, reflective practitioner techniques, and group formation.

10550205 Counseling Theory (3 cr.)

Summarize the history of, and explore the primary concepts within, the major approaches to counseling. Explore the empirical foundations of each theory. Examine application of theories to counseling. Review specific techniques of each theoretical approach. Examine the role of the counselor within each theoretical approach. Explore the role of the counselor, the scope of practice, and the ethical implications in counseling.

10550206 Introduction to Interviewing and Counseling Skills (3 cr.)

Analyze foundational skills in the counseling relationship. Analyze the stages of the helping processes and the roles professionals play in the processes. Analyze the importance of establishing therapeutic relationships. Apply basic counseling techniques. Apply interviewing and counseling skills through mock counseling sessions and personal experience reflections. Examine issues of boundaries and ethics.

10550209 Family Systems (3 cr.)

Provides a broad understanding of family systems theory and practice relevant to the human services field. Focus is on evaluating the communication and interaction patterns and applying interventions and strategies.

Course Descriptions

- 10801195 Written Communication (3 cr.)** Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
- 10801196 Oral/Interpersonal Comm (3 cr.)** Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
- 10806198 Human Biology (4 cr.)** This is an introductory course that emphasizes the structure of the human body and the functional interrelationships of the body's systems. Consideration is given to the human body and disease, human genetics, human ecology, and the role that humans play in the environment. The course consists of 3 hours of lecture and 2 hours of lab per week. Note: This course does not meet requirements for or substitute for General Anatomy and Physiology or Anatomy & Physiology I and II.
- 10809172 Introduction to Diversity Studies (3 cr.)** This course introduces the study of diversity from a local to a global perspective using a holistic, interdisciplinary approach that encourages exploration and prepares students to work in a diverse environment. The course introduces basic diversity concepts, examines the impact of bias and power differentials among groups, explores the use of culturally responsive communication strategies, and compares forces that shape diversity in an international context.
- 10809188 Developmental Psychology (3 cr.)** Developmental Psychology is the study of human development throughout the lifespan. This course explores developmental theory and research with an emphasis on the interactive nature of the biological, cognitive, and psychosocial changes that affect the individual conception to death. Application activities and critical thinking skills will enable students to gain an increased knowledge and understanding of themselves and others.
- 10809196 Intro to Sociology (3 cr.)** Introduces students to the fundamental sociological concepts, including sociological perspectives, research methods, the significance of culture in society, and the socialization process. Other topics include deviance, the impact of groups on behavior, societal inequities, global changes, the role of social institutions, and social stratification.

Course Descriptions

10809198 Intro to Psychology (3 cr.)

This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.

522 - Educational Career and Technical Education Instruction

10152105 Web Graphics, Introduction to (3 cr.)

Introduces the fundamental concepts necessary to generate and prepare graphics for Web pages. The course will focus on raster as well as vector images. Areas addressed will be color selection, layout, text, optimizing images, creating backgrounds, slicing, creating navigation, transparent graphics and animated graphics. Adobe software will be utilized.

10442120 Related Welding (1 cr.)

Prepares students with the common techniques and procedures for SMAW, GMAW, GTAW, and FCAW welding in a repair or machine shop environment. Topics include welding metal, cutting metal with plasma and oxy-fuel, and metal identification. Laboratory activities will provide the student with hands-on practice.

10455102 Introduction to Construction Management (CMT cr.) (1 cr.)

Serves as an introduction to the construction management profession and the Construction Management program at FVTC. Provides students with an overview of residential, commercial and industrial construction practice prior to student co-op experience.

10455103 Understanding Construction Documents (CMT cr.) (1 cr.)

Explores the contents of construction documents including site civil, structural, architectural, and MEP design and specifications. Applies knowledge of the design and specifications through the interpretation of the drawings, models, and the project manual. Navigates all facets of the construction documents to examine a project by discipline and as a system.

10455120 Revit Architecture (CMT cr.) (2 cr.)

Introduces students to principles of building information modeling through the utilization of Autodesk Revit Architecture. Basic entry level user skills and advanced modeling and documentation techniques will be mastered utilizing Autodesk Revit. Students will model commercial structures by creating a 3-D set of documents inclusive of plan, elevation, and section views including associated schedules and libraries.

10455127 Construction Safety Management (CMT cr.) (2 cr.)

Provides training in Occupational Safety and Health Administration (OSHA) standards. Teaches strategies for creating a successful safety management plan. Students receive their OSHA 30-hr. Construction Safety card upon successful completion.

Course Descriptions

10522106 EDU: Child and Adolescent Development (3 cr.)

Students will analyze the physical, cognitive and social-emotional development of children with an emphasis on school age children and adolescents. Students will examine environmental factors that influence child development. Developmental theories will be summarized and related to current teaching practices.

10522107 EDU: Overview of Special Education (3 cr.)

Students examine a historical overview of special education and special education law including special education disability categories as defined by the Individuals with Disabilities Education Act (IDEA). Students explore state and federal qualification special education criteria and societal responses to students with disabilities. Students examine the impact of a student with disabilities on family dynamics and the role school personnel play in supporting students with disabilities.

10522141 Intro to Career & Technical Education Inst. (1 cr.)

Covers the history of Technology and Engineering Education, current trends, and the future of the field. Students will gain a broad understanding of curricular framework, course development methodology, STEM education philosophy, and how Technology and Engineering fits into the broader aspect of K-12 and post-secondary education.

10522142 Occupational Co-op (1 cr.)

Provides students with professional experience in an occupational field related to Career and Technical Education. Participants in this course are responsible for gaining employment in either: manufacturing, maintenance, automotive repair, truck repair, construction, information technology, or engineering related fields.

10522145 Technical Education Field Experience 1 (2 cr.)

Students learn about and apply pedagogy in an actual K-12 technical education setting while under the supervision of a Department of Public Instruction certified teacher. Explore the Wisconsin Standards for Career and Technical Education (CTE), demonstrate professional behaviors, and observe the integration of rigorous academic and technical standards in CTE. Observe integration of either: Career and Technical Student Organizations (CTSOs), Dual Credit Options, or Work-Based Learning in a contemporary K-12 CTE program.

Course Descriptions

10522146 Technical Education Field Experience 2 (2 cr.)	Serves as a capstone course in the Associate in Applied Science degree program. Students will be placed or will be working in a K-12 setting with children and create a portfolio that prepares students for the Wisconsin Department of Public Instruction Experienced-Based Licensure for Technical and Vocational Education Subjects form PI-1623. In this course, students will be performing quality technical and pre-engineering education, applying knowledge of child development and positive guidance, utilizing observation and assessment techniques, and assessing developmentally appropriate Career and Technical Education (CTE) activities while under the supervision of a Department of Public Instruction certified teacher.
10602100 Automotive Maintenance and Light Repair 1 (4 cr.)	Focuses on developing skills in professionalism, safety, and the use of basic and power tools. Students are introduced to the automotive service industry and learn to use both comprehensive and manufacturer's service information to perform vehicle maintenance in 9 Automotive Service Excellence (ASE) areas.
10602101 Automotive Maintenance and Light Repair 2 (4 cr.)	Focuses on developing the skills needed to diagnose, service and repair vehicle braking systems with an introduction to ABS. Includes the development of skills needed to perform maintenance and repair of chassis and driveline related items.
10606139 Introduction to Autodesk Inventor (2 cr.)	Will introduce the student to the basics of Autodesk's Inventor software. Close attention will be paid to properly navigating the interface. Sketching, dimensional and geometric constraints, part modeling, drawing creation, and assembly modeling will all be examined.
10606151 Sketching and the Design Process (1 cr.)	Introduces sketching, which is typically one of the first steps in working out and documenting a design. Almost all initial ideas are hand sketched long before any graphical data is created with the CAD system. Basic sketching techniques and their application to one view, oblique, isometric, and perspective drawings are covered. Lettering techniques are also covered.
10606152 CAD and Geometric Constructions (1 cr.)	Focuses on the very basics of using AutoCAD software. This course will cover the interface and basic drawing, editing, and printing commands. Applying constructive geometrical thinking to solve more complex problems and accurately locate points, edges, and surfaces when the software cannot do so automatically is also covered.
10606153 Multiview Projections (1 cr.)	Covers standard practices of orthographic projection. Best practices for deciding which views to show, how they should be oriented in your drawing, and how to represent key information such as edges, surfaces, vertices, hidden lines, centerlines, and other crucial details are covered.

Course Descriptions

10606154 Section Views and Auxiliary Views (1 cr.)	Explains that often times there are internal features that lie behind other features, and features that lie on inclined and oblique surfaces. This course covers the creation and placement of section and auxiliary views, allowing portrayal of these features. Descriptive geometry techniques for finding piercing points, points of planar intersections, and surface development are also covered.
10606155 Dimensioning and Tolerancing (1 cr.)	Explains that dimensions and notes define the size, location, finish, and other requirements to fully describe what is to be manufactured. These standards are covered in this course. Tolerancing, or making allowances for human ability, material properties, and the manufacturing environment is also covered.
10623119 Manufacturing Processes with Lab (4 cr.)	Introduces the manufacturing processes used to cast, form, cut, and join materials including hands-on experience with manual machining, forming, and joining processes. Incorporates print reading and basic metrology skills.
10623121 Engineering Materials (3 cr.)	Discusses the relationship between the properties and processes of various materials, including metals, ceramics, polymers, and composites. Emphasis is on the fundamentals of selecting materials based on engineering design criteria.
10660110 DC Circuits 1 (1 cr.)	Introduces electrical safety and program procedures. The course covers Ohm's Law, power law, series circuits, and voltmeter, ammeter and ohmmeter applications. Number powers, electronic notations, circuit component recognition and diagrams, resistor power ratings, color code, Kirchhoff's voltage law and atomic structure are also included.
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.

Course Descriptions

10804197 College Algebra and Trigonometry with Applications (5 cr.)	This course covers skills needed for success in Calculus and many application areas at the baccalaureate level. Algebra topics include the real and complex number systems, polynomials, exponents, radicals, solving equations and inequalities, relations and functions, systems of equations and inequalities, graphing, and conic sections. Trigonometry topics include the unit circle, trigonometric functions, graphs, identities, equations, inverse functions, solutions of triangles, complex numbers, polar coordinates, and vectors.
10806139 Survey of Physics (3 cr.)	This course emphasizes understanding basic physics concepts through laboratory investigation and applications. Topics include kinematics, dynamics, work, energy, power, temperature, heat, waves, electricity, magnetism, electromagnetic waves, optics, and atomic and nuclear physics.
10809166 Intro to Ethics: Theory & App (3 cr.)	This course provides a basic understanding of the theoretical foundations of ethical thought. Diverse ethical perspectives will be used to analyze and compare relevant issues. Students will critically evaluate individual, social and professional standards of behavior, and apply a systematic decision-making process to these situations.
10809198 Intro to Psychology (3 cr.)	This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.
522 - Educational Family and Consumer Sciences Education Instruction	
10109152 Introduction to Hospitality (3 cr.)	Introduces various aspects of the hospitality industry including lodging, food service, tourism and customer service. Students evaluate potential internship and career opportunities as they explore topics including professionalism, ethics & etiquette.
10304110 Fundamentals of Design (3 cr.)	Provides a foundation in the principles and elements of design. The understanding of good design, taste and creativity is stressed in student projects. Students use their projects in a design show.
10304125 Basic Interior Design (3 cr.)	Focuses on the basic elements, materials, and mathematics of interior design. Topics include furniture arranging and the treatment of windows, walls and floors.
10304129 Textiles (3 cr.)	Studies textiles as they appear in interiors, taking the student from fiber to fabric. Topics include fibers, yarns, fabric construction, finishes and decorating techniques. Emphasis is on selection, care, use and textile legislation as related to the field of interior design.
10307179 ECE: Child Development (3 cr.)	This 3-credit course examines child development within the context of the early childhood education setting. This course focuses on children ages 3-8 years of age.

Course Descriptions

10307195 ECE: Family & Community Relationships (3 cr.)	This 3-credit course will examine the role of relationships with family and community in early childhood education for children from birth to 8 years of age. In this course, students will complete the Strengthening Families Training.
10316110 Culinary Fundamentals (3 cr.)	Applies the basic principles involved in the purchase, preparation and use of food stuffs. The proper identification and use of equipment and correct measuring techniques are covered. This course provides the theory basis for production courses.
10316118 Sanitation for Food Service Operations (1 cr.)	Focuses on the development of skills to follow sanitation and hygiene provisions in state codes. The Servsafe certification test is included.
10316119 Nutrition for Culinary Arts (1 cr.)	Focuses on the six major nutrients (carbohydrates, proteins, fats, minerals, vitamins and water) and how each is used by the body. The planning of well-balanced diets and the nutritional analysis of diets are emphasized.
10316125 Culinary Foundations (1 cr.)	Prepares the entry-level culinary student for future success by introducing knife skills development, cooking principles and methods, and organizational skills and Mise en place (French phrase meaning "œput in place" as in set up). Emphasis is placed on hands-on learning and skills development.
10316170 Science of Baking (2 cr.)	Focuses on identifying, applying and interpreting the scientific concepts of the baking process. Topics include recipe conversion, scaling, measurement, baking terminology, equipment identification and use, timing, heat transfer, ingredient functionality, presentation and display. This course combines lab and lecture activities.
10522103 EDU: Introduction to Educational Practices (3 cr.)	Students analyze preK-12 education in the United States, determine roles and responsibilities of school personnel, and explore current trends and best practices. Students identify how students learn and the foundations of lesson planning. Students analyze assessment strategies, classroom management, and techniques for supporting learners.
10522105 EDU: Behavior Management (3 cr.)	Students analyze the behavior of students in educational settings. Emphasis will be given to examining the influences on behavior and creating proactive learning environments through behavioral interventions and support. Students will evaluate strategies for creating a safe and supportive classroom environment.

Course Descriptions

10522124 EDU: Supporting Students with Disabilities (3 cr.)	Students identify research-based interventions for learners in categories defined by the Individuals with Disabilities Education Act (IDEA). Students interpret Individualized Educational Programs and examine special education related services available for learners. Students collect data to document student behavior and academic performance and recommend program adaptations and accommodations for students with disabilities while applying the concepts of least restrictive environment and inclusion.
10522150 EDU: Intro to Family & Consumer Sciences Education (3 cr.)	Covers the history of Family and Consumer Sciences (FCS) education, current trends, and the future of the field. Students will gain a broad understanding of curricular framework, course development methodology, FCS education philosophy, and how FCS areas such as baking, culinary, education, and interior design fit into the broader aspect of K-12 education.
10522151 EDU: Family and Consumer Sciences Industry Co-Op (1 cr.)	Provides students with professional experience in an occupational field related to Family and Consumer Sciences. Participants in this course are responsible for gaining employment in a baking, culinary, hospitality, interior design, or an early childhood related field.
10522152 EDU: Family and Consumer Sciences Practicum 1 (2 cr.)	Students apply the skills learned in previous program courses in a school setting while under the supervision of a Department of Public Instruction certified teacher. Students support learners while demonstrating professionalism. Students begin the reflective process.
10522153 EDU: Family and Consumer Sciences Practicum 2 (2 cr.)	Students apply the skills learned in previous program courses in a school setting while under the supervision of a Department of Public Instruction certified teacher. Students support learners and while demonstrating professionalism. Students apply job search skills.
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
10801198 Speech (3 cr.)	Explores the fundamentals of effective oral presentation to small and large groups. Topic selection, audience analysis, methods of organization, research, supporting evidence, delivery techniques, active listening, and other essential elements of speaking successfully, form the basis of the course. Includes informative, persuasive, and occasion speech presentations. Audience requirements to be determined by the individual colleges.Â

Course Descriptions

10804123 Math w Business Apps (3 cr.) This course integrates algebraic concepts, proportions, percents, simple interest, compound interest, annuities, and basic statistics with business/consumer scenarios. It also applies math concepts to the purchasing/buying and selling processes.

10809188 Developmental Psychology (3 cr.) Developmental Psychology is the study of human development throughout the lifespan. This course explores developmental theory and research with an emphasis on the interactive nature of the biological, cognitive, and psychosocial changes that affect the individual conception to death. Application activities and critical thinking skills will enable students to gain an increased knowledge and understanding of themselves and others.

10809196 Intro to Sociology (3 cr.) Introduces students to the fundamental sociological concepts, including sociological perspectives, research methods, the significance of culture in society, and the socialization process. Other topics include deviance, the impact of groups on behavior, societal inequities, global changes, the role of social institutions, and social stratification.

10809198 Intro to Psychology (3 cr.) This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.

522 - Educational Foundations of Teacher Education

10522102 EDU: Techniques in Reading (3 cr.) The purpose of this course is to provide students with a solid foundation for effective literacy instruction in K – 9 grade classrooms. The course will focus on the major five elements of reading: phonemic awareness, phonics, vocabulary, fluency, and comprehension. Phonological Awareness will also be addressed. This course will review research-based teaching strategies, instructional materials as well as methods and assessments for effective and inclusive literacy instruction.

10522103 EDU: Introduction to Educational Practices (3 cr.) Students analyze preK-12 education in the United States, determine roles and responsibilities of school personnel, and explore current trends and best practices. Students identify how students learn and the foundations of lesson planning. Students analyze assessment strategies, classroom management, and techniques for supporting learners.

Course Descriptions

10522104 EDU: Technology in Education (3 cr.)

The focus of this course is for students to teach and learn with information and technology rather than about information and technology. The Wisconsin Department of Public Education (DPI) states that "Information and Technology Literacy is the ability of a teacher, working independently or with others, to use tools, resources, processes, and systems responsibly to access and evaluate information in any medium, and to use that information to solve problems, communicate clearly, make informed decisions, and construct new knowledge, products, or systems." Students will analyze all aspect of information and technology literacy as well as begin their digital professional teaching portfolio.

10522105 EDU: Behavior Management (3 cr.)

Students analyze the behavior of students in educational settings. Emphasis will be given to examining the influences on behavior and creating proactive learning environments through behavioral interventions and support. Students will evaluate strategies for creating a safe and supportive classroom environment.

10522106 EDU: Child and Adolescent Development (3 cr.)

Students will analyze the physical, cognitive and social-emotional development of children with an emphasis on school age children and adolescents. Students will examine environmental factors that influence child development. Developmental theories will be summarized and related to current teaching practices.

10522107 EDU: Overview of Special Education (3 cr.)

Students examine a historical overview of special education and special education law including special education disability categories as defined by the Individuals with Disabilities Education Act (IDEA). Students explore state and federal qualification special education criteria and societal responses to students with disabilities. Students examine the impact of a student with disabilities on family dynamics and the role school personnel play in supporting students with disabilities.

10522112 EDU: Equity in Education (3 cr.)

Students analyze personal culture, explore cultural constructs, evaluate cultural bias in educational materials and analyze strategies to support English Learners. Students examine diversity in the classroom and develop techniques for supporting equity in the learning environment. In addition, students collaborate to identify service needs in the community and demonstrate professional collaboration skills through participating in a service learning project.

10522114 EDU: Techniques in Language Arts (3 cr.)

Students will be introduced to the science and art of teaching language arts. Evidence-based approaches and assessments will be examined and practiced. Students will create a literature file through the exploration of a variety of children's/young adult literature.

Course Descriptions

10522118 EDU: Techniques in Math (3 cr.)	Students learn key terminology and research-based strategies to support learners in math domains: numbers, base ten operations, algebraic thinking, geometry, probability/statistics and measurement and data. Current practice including manipulatives, problem solving and assessment will be covered within the framework of state and national standards.
10522119 EDU: Techniques in Social Studies (3 cr.)	Students analyze current content in social studies education as recommended by the National Council for Social Studies and Wisconsin DPI. Students design learning opportunities for the five content areas of social studies: Geography, History, Behavioral Sciences (Culture and Society), Political Science (Civics and Government), and Economics that incorporate the social studies inquiry practices and processes. Students receive training on the history, culture, and tribal sovereignty of Wisconsin's eleven federally recognized American Indian nations and tribal communities (Act 31) and the Holocaust and other genocides (Act 30) to meet Wisconsin teacher standards and teaching requirements.
10522120 EDU: Techniques in Science (3 cr.)	Students are introduced to the content and processes of teaching science. Students explore science processes, strategies, procedures, assessment options and factors affecting science learning. Students practice strategies for assisting with group and individual activities in science. This course provides a foundation in the concepts and models of hands-on, student-centered science and its assessment as described in WI DPI Science Standards and Next Generation Science Standards (NGSS).
10522124 EDU: Supporting Students with Disabilities (3 cr.)	Students identify research-based interventions for learners in categories defined by the Individuals with Disabilities Education Act (IDEA). Students interpret Individualized Educational Programs and examine special education related services available for learners. Students collect data to document student behavior and academic performance and recommend program adaptations and accommodations for students with disabilities while applying the concepts of least restrictive environment and inclusion.
10522129 EDU: Practicum 1 (3 cr.)	Students apply the skills learned in previous program courses in a school setting while under the supervision of a Department of Public Instruction certified teacher. Students support learners while demonstrating professionalism. Students begin the reflective process.
10522131 EDU: Practicum 2 (3 cr.)	Students apply the skills learned in previous program courses in a school setting while under the supervision of a Department of Public Instruction certified teacher. Students support learners and while demonstrating professionalism. Students apply job search skills.

Course Descriptions

- 10801136 English Composition 1 (3 cr.)** Learners develop and apply skills in all aspects of the writing process. Through a variety of learning activities and written documents, learners employ rhetorical strategies, plan, organize and revise content, apply critical reading strategies, locate and evaluate information, integrate and document sources, and apply standardized English language conventions.
- 10801196 Oral/Interpersonal Comm (3 cr.)** Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
- 10804123 Math w Business Apps (3 cr.)** This course integrates algebraic concepts, proportions, percents, simple interest, compound interest, annuities, and basic statistics with business/consumer scenarios. It also applies math concepts to the purchasing/buying and selling processes.
- 10809172 Introduction to Diversity Studies (3 cr.)** This course introduces the study of diversity from a local to a global perspective using a holistic, interdisciplinary approach that encourages exploration and prepares students to work in a diverse environment. The course introduces basic diversity concepts, examines the impact of bias and power differentials among groups, explores the use of culturally responsive communication strategies, and compares forces that shape diversity in an international context.
- 10809196 Intro to Sociology (3 cr.)** Introduces students to the fundamental sociological concepts, including sociological perspectives, research methods, the significance of culture in society, and the socialization process. Other topics include deviance, the impact of groups on behavior, societal inequities, global changes, the role of social institutions, and social stratification.
- 10809198 Intro to Psychology (3 cr.)** This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.

522 - Educational Intro to Education

10522103 EDU: Introduction to Educational Practices (3 cr.)

Students analyze preK-12 education in the United States, determine roles and responsibilities of school personnel, and explore current trends and best practices. Students identify how students learn and the foundations of lesson planning. Students analyze assessment strategies, classroom management, and techniques for supporting learners.

Course Descriptions

10522104 EDU: Technology in Education (3 cr.)

The focus of this course is for students to teach and learn with information and technology rather than about information and technology. The Wisconsin Department of Public Education (DPI) states that “Information and Technology Literacy is the ability of a teacher, working independently or with others, to use tools, resources, processes, and systems responsibly to access and evaluate information in any medium, and to use that information to solve problems, communicate clearly, make informed decisions, and construct new knowledge, products, or systems.” Students will analyze all aspect of information and technology literacy as well as begin their digital professional teaching portfolio.

10522106 EDU: Child and Adolescent Development (3 cr.)

Students will analyze the physical, cognitive and social-emotional development of children with an emphasis on school age children and adolescents. Students will examine environmental factors that influence child development. Developmental theories will be summarized and related to current teaching practices.

522 - Educational Teacher Apprenticeship

10522102 EDU: Techniques in Reading (3 cr.)

The purpose of this course is to provide students with a solid foundation for effective literacy instruction in K – 9 grade classrooms. The course will focus on the major five elements of reading: phonemic awareness, phonics, vocabulary, fluency, and comprehension. Phonological Awareness will also be addressed. This course will review research-based teaching strategies, instructional materials as well as methods and assessments for effective and inclusive literacy instruction.

10522103 EDU: Introduction to Educational Practices (3 cr.)

Students analyze preK-12 education in the United States, determine roles and responsibilities of school personnel, and explore current trends and best practices. Students identify how students learn and the foundations of lesson planning. Students analyze assessment strategies, classroom management, and techniques for supporting learners.

10522104 EDU: Technology in Education (3 cr.)

The focus of this course is for students to teach and learn with information and technology rather than about information and technology. The Wisconsin Department of Public Education (DPI) states that “Information and Technology Literacy is the ability of a teacher, working independently or with others, to use tools, resources, processes, and systems responsibly to access and evaluate information in any medium, and to use that information to solve problems, communicate clearly, make informed decisions, and construct new knowledge, products, or systems.” Students will analyze all aspect of information and technology literacy as well as begin their digital professional teaching portfolio.

Course Descriptions

10522105 EDU: Behavior Management (3 cr.)	Students analyze the behavior of students in educational settings. Emphasis will be given to examining the influences on behavior and creating proactive learning environments through behavioral interventions and support. Students will evaluate strategies for creating a safe and supportive classroom environment.
10522106 EDU: Child and Adolescent Development (3 cr.)	Students will analyze the physical, cognitive and social-emotional development of children with an emphasis on school age children and adolescents. Students will examine environmental factors that influence child development. Developmental theories will be summarized and related to current teaching practices.
10522107 EDU: Overview of Special Education (3 cr.)	Students examine a historical overview of special education and special education law including special education disability categories as defined by the Individuals with Disabilities Education Act (IDEA). Students explore state and federal qualification special education criteria and societal responses to students with disabilities. Students examine the impact of a student with disabilities on family dynamics and the role school personnel play in supporting students with disabilities.
10522112 EDU: Equity in Education (3 cr.)	Students analyze personal culture, explore cultural constructs, evaluate cultural bias in educational materials and analyze strategies to support English Learners. Students examine diversity in the classroom and develop techniques for supporting equity in the learning environment. In addition, students collaborate to identify service needs in the community and demonstrate professional collaboration skills through participating in a service learning project.
10522114 EDU: Techniques in Language Arts (3 cr.)	Students will be introduced to the science and art of teaching language arts. Evidence-based approaches and assessments will be examined and practiced. Students will create a literature file through the exploration of a variety of children's/young adult literature.
10522118 EDU: Techniques in Math (3 cr.)	Students learn key terminology and research-based strategies to support learners in math domains: numbers, base ten operations, algebraic thinking, geometry, probability/statistics and measurement and data. Current practice including manipulatives, problem solving and assessment will be covered within the framework of state and national standards.

Course Descriptions

10522119 EDU: Techniques in Social Studies (3 cr.)	Students analyze current content in social studies education as recommended by the National Council for Social Studies and Wisconsin DPI. Students design learning opportunities for the five content areas of social studies: Geography, History, Behavioral Sciences (Culture and Society), Political Science (Civics and Government), and Economics that incorporate the social studies inquiry practices and processes. Students receive training on the history, culture, and tribal sovereignty of Wisconsin's eleven federally recognized American Indian nations and tribal communities (Act 31) and the Holocaust and other genocides (Act 30) to meet Wisconsin teacher standards and teaching requirements.
10522120 EDU: Techniques in Science (3 cr.)	Students are introduced to the content and processes of teaching science. Students explore science processes, strategies, procedures, assessment options and factors affecting science learning. Students practice strategies for assisting with group and individual activities in science. This course provides a foundation in the concepts and models of hands-on, student-centered science and its assessment as described in WI DPI Science Standards and Next Generation Science Standards (NGSS).
10522124 EDU: Supporting Students with Disabilities (3 cr.)	Students identify research-based interventions for learners in categories defined by the Individuals with Disabilities Education Act (IDEA). Students interpret Individualized Educational Programs and examine special education related services available for learners. Students collect data to document student behavior and academic performance and recommend program adaptations and accommodations for students with disabilities while applying the concepts of least restrictive environment and inclusion.
10522129 EDU: Practicum 1 (3 cr.)	Students apply the skills learned in previous program courses in a school setting while under the supervision of a Department of Public Instruction certified teacher. Students support learners while demonstrating professionalism. Students begin the reflective process.
10522131 EDU: Practicum 2 (3 cr.)	Students apply the skills learned in previous program courses in a school setting while under the supervision of a Department of Public Instruction certified teacher. Students support learners and while demonstrating professionalism. Students apply job search skills.
10801136 English Composition 1 (3 cr.)	Learners develop and apply skills in all aspects of the writing process. Through a variety of learning activities and written documents, learners employ rhetorical strategies, plan, organize and revise content, apply critical reading strategies, locate and evaluate information, integrate and document sources, and apply standardized English language conventions.

Course Descriptions

10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
10804123 Math w Business Apps (3 cr.)	This course integrates algebraic concepts, proportions, percents, simple interest, compound interest, annuities, and basic statistics with business/consumer scenarios. It also applies math concepts to the purchasing/buying and selling processes.
10809172 Introduction to Diversity Studies (3 cr.)	This course introduces the study of diversity from a local to a global perspective using a holistic, interdisciplinary approach that encourages exploration and prepares students to work in a diverse environment. The course introduces basic diversity concepts, examines the impact of bias and power differentials among groups, explores the use of culturally responsive communication strategies, and compares forces that shape diversity in an international context.
10809196 Intro to Sociology (3 cr.)	Introduces students to the fundamental sociological concepts, including sociological perspectives, research methods, the significance of culture in society, and the socialization process. Other topics include deviance, the impact of groups on behavior, societal inequities, global changes, the role of social institutions, and social stratification.
10809198 Intro to Psychology (3 cr.)	This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.
525 - Electroencephalograph Neurodiagnostic Technologist	
10501101 Medical Terminology (3 cr.)	Focuses on the component parts of medical terms: prefixes, suffixes and word roots. Students practice formation, analysis and reconstruction of terms. Emphasis on spelling, definition and pronunciation. Introduction to operative, diagnostic, therapeutic and symptomatic terminology of all body systems, as well as systemic and surgical terminology.
10501107 Digital Literacy for Healthcare (2 cr.)	The focus of this course is the use of technology in healthcare. Learners use common business software applications, including word processing, presentation, spreadsheet, and databases. Communication methods using technology are addressed. Learners gain experience with using the electronic health record (EHR). Healthcare EHR security issues, social media use, and digital healthcare resources are examined.

Course Descriptions

10501153 Body Structure and Function (2 cr.)	Introduces basic anatomy and physiology of the human body. Students explore the basics of cells and cell chemistry and build on that knowledge to develop an understanding of tissues, organs, and organ systems. Students explore each body system and how systems function under normal (homeostatic) body conditions. Students develop an overall understanding of how the human body operates on a minute to minute, day to day, basis when all systems are functioning properly.
10525101 NDT: EEG Basic (3 cr.)	Discover the captivating world of Electroencephalography (EEG) through our comprehensive course designed to provide a solid foundation in EEG measurement, recording, and interpretation. This program is tailored for aspiring EEG technologists, and students seeking to delve into the intricacies of brain wave patterns and their clinical applications. Through interactive lectures, hands-on demonstrations, and engaging case studies, students cultivate the expertise needed to perform EEG measurements, interpret waveforms, and contribute to accurate clinical assessments.
10525102 NDT: Neuroanatomy (3 cr.)	Examines the intricate world of neural anatomy and pathways. Students explore neural tissue, muscle tissue, spinal cord function, sensory and motor pathways, and the complexities of the brain and cranial nerves. Through engaging multimedia content and interactive quizzes, students acquire a comprehensive understanding of neural tissue, neural-muscular interactions, the spinal cord, sensory and motor pathways, and the complexities of the brain and cranial nerves, allowing students to grasp the intricacies of the nervous system and its vital role in human function.
10525103 NDT: Nerve Conduction Studies Basic (3 cr.)	Embark on a comprehensive journey through the intricacies of nerve conduction studies (NCS) with our specialized course. Designed for aspiring neurodiagnostic technologists, this program offers a deep dive into nerve conduction electronics, instrumentation, and the nuances of conducting accurate and meaningful studies. Throughout this course, students engage in hands-on practice, interactive sessions, and case studies to reinforce understanding of nerve conduction studies. Our experienced instructor will guide you in interpreting complex nerve conduction patterns, troubleshooting technical challenges, and honing clinical judgment.

Course Descriptions

- 10525104 NDT: EEG Advanced (4 cr.)** Examines epilepsy and electroencephalography (EEG) monitoring, unravels the intricacies of abnormal EEG activity, and explores cutting-edge treatments for epilepsy. Students gain a solid foundation in the field and its clinical applications. Throughout this course, students engage in case studies and practical scenarios, enhancing their ability to assess and manage epilepsy and abnormal EEG activity. At the course's conclusion, students possess a comprehensive understanding of epilepsy, EEG monitoring, and multifaceted strategies for improving patient outcomes.
- 10525105 NDT: Evoked Potentials Basic (2 cr.)** This comprehensive course delves into the intricacies of visual, auditory, and somatosensory evoked potentials, equipping students with the knowledge and skills to navigate these diagnostic tools effectively. Throughout the course, students engage in a dynamic blend of theoretical learning and practical applications. Our expert instructor will guide students through the techniques, electrode placements, recording methodologies, and data interpretation required for each type of evoked potential. Gain hands-on experience in acquiring and analyzing evoked potentials data, enhancing student proficiency in clinical neurophysiology.
- 10525107 NDT: Theory (3 cr.)** Delves into a wide spectrum of neurological disorders and brain abnormalities, provides thorough examination of their causes, manifestations, diagnostic methods, and potential treatment approaches. Students learn about strokes and arrhythmias to episodic disorders of consciousness, and gain insight into the intricate world of the human brain and its various complexities. Throughout this course, students will engage with expert insights to develop a comprehensive understanding of neurological disorders and brain abnormalities. By the end of the course, students will be equipped with valuable knowledge to contribute to the field of neurology and enhance patient care.
- 10525109 NDT: Nerve Conduction Study Advanced (3 cr.)** Examines nerve conduction studies and neuromuscular disorders. Students learn the nuances of uncommon nerve conduction studies, the complexities of various nerve injuries, neuromuscular conditions, and gain a deep understanding of advanced concepts in clinical neurophysiology. Throughout this course, students engage in hands-on exercises, case studies, and interactive discussions, honing their ability to perform and understand specialized nerve conduction studies.
- 10525116 NDT: Introduction to Practicum (2 cr.)** Examines the introductory understanding of neurodiagnostic practices through a combination of focused observation and limited hands-on opportunities. Students gain foundational insight into neurodiagnostic practices before pursuing more extensive hands-on training.

Course Descriptions

10525117 NDT: Practicum 1 (3 cr.)

Embark on an immersive journey into the realm of neurodiagnostics through this comprehensive clinical rotation. Designed to provide hands-on experience under direct supervision, this clinical offers a dynamic and practical learning opportunity for aspiring neurodiagnostic professionals. Throughout this clinical rotation, students actively participate in conducting tests, recording data, interacting with patients, and collaborating with multidisciplinary healthcare teams. Students' skills are honed under the guidance of experienced neurodiagnostic professionals, ensuring a well-rounded and immersive learning experience.

10525118 EEG Symposium (1 cr.)

Unlock the intricacies of challenging EEG topics and elevate expertise in neurodiagnostics with our immersive course. Designed for neurodiagnostic students seeking to enhance their EEG proficiency, this comprehensive program focuses on identifying, re-evaluating, and applying knowledge to tackle complex EEG scenarios. Through a blend of interactive lectures, collaborative discussions, and practical case simulations, students gain the confidence to navigate challenging EEG topics with precision. Our instructors will guide you in honing the ability to understand intricate EEG patterns, identify artifacts, and make informed clinical decisions.

10525119 Intro to Intraoperative Neuromonitoring (1 cr.)

Examines the dynamic field of intraoperative neuromonitoring. Students expand their expertise in neurodiagnostics, in a focused exploration of intraoperative monitoring techniques in the context of carotid endarterectomy, epilepsy surgery, and spinal cord procedures. Through engaging lectures, case studies, and interactive simulations, students acquire practical skills and knowledge in utilizing EEG monitoring for carotid endarterectomy, epilepsy surgery, and spinal cord procedures. Our instructors will guide you through the nuances of intraoperative neuromonitoring, enabling you to confidently contribute to enhanced patient care and surgical success.

10525120 NDT: Practicum 2 (5 cr.)

Embark on an enriching hands-on clinical rotation into the dynamic world of neurodiagnostics with our comprehensive, indirectly supervised, clinical rotation. This immersive program is designed to provide students with a robust and practical understanding of neurodiagnostic techniques, enabling students to excel in this vital field of healthcare. By the end of this program, students emerge as confident and skilled neurodiagnostic entry-level technologists, equipped with the knowledge and practical expertise necessary to excel in the dynamic field of neurodiagnostics.

Course Descriptions

10525121 Principles of Polysomnography (2 cr.)	Embark on a comprehensive exploration of sleep technology and disorders in our dynamic course designed to equip students with a strong foundation in this vital field. Through a dynamic blend of lectures, interactive discussions, case studies, and practical exercises, students emerge well-equipped to navigate the multifaceted field of sleep technology.
10801136 English Composition 1 (3 cr.)	Learners develop and apply skills in all aspects of the writing process. Through a variety of learning activities and written documents, learners employ rhetorical strategies, plan, organize and revise content, apply critical reading strategies, locate and evaluate information, integrate and document sources, and apply standardized English language conventions.
10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
10804113 College Technical Math 1A (3 cr.)	Topics include: solving linear equations; graphing; percent; proportions; measurement systems; computational geometry; and right triangle trigonometry. Emphasis will be on the application of skills to technical problems. Successful completion of College Technical Mathematics 1A and College Technical Mathematics 1B is the equivalent of College Technical Mathematics 1.
10809103 Think Critically & Creatively (3 cr.)	Provides instruction about critical and creative thinking that is in high demand in all occupations. Models, theories, and processes provide the foundation for learning logical thinking strategies. Students will apply a systematic approach to problem solving by analyzing the problem, assessing possible solutions, and making effective decisions. In addition, students will generate ideas and analyze complex issues. This course assists students with developing a critical thinking mindset which is essential at every level of personal and professional life.
10809172 Introduction to Diversity Studies (3 cr.)	This course introduces the study of diversity from a local to a global perspective using a holistic, interdisciplinary approach that encourages exploration and prepares students to work in a diverse environment. The course introduces basic diversity concepts, examines the impact of bias and power differentials among groups, explores the use of culturally responsive communication strategies, and compares forces that shape diversity in an international context.

Course Descriptions

- 10809198 Intro to Psychology (3 cr.)** This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.
- 528 - Funeral Funeral Service shared degree awarded by MATC**
- 10101180 Financial Accounting 1 (4 cr.)** Prepares students to analyze, record, summarize and interpret accounting information. The course focuses on business transactions, financial statements, merchandising, inventory, special journals, internal controls, receivables, plant assets and payroll.
- 10102103 Business Law 1 (3 cr.)** Introduces legal principles and standard business law concepts and their implications for business. It emphasizes contracts, sales, commercial paper, bailment, agency and real property, with references to the Uniform Commercial Code and recent consumer legislation.
- 10801136 English Composition 1 (3 cr.)** Learners develop and apply skills in all aspects of the writing process. Through a variety of learning activities and written documents, learners employ rhetorical strategies, plan, organize and revise content, apply critical reading strategies, locate and evaluate information, integrate and document sources, and apply standardized English language conventions.
- 10801196 Oral/Interpersonal Comm (3 cr.)** Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
- 10806134 General Chemistry (4 cr.)** Covers the fundamentals of chemistry. Topics include scientific method, problem-solving using quantitative, characteristics of matter, periodic relationships of elements, chemical bonding, chemical reactions, chemical equilibrium, analysis of chemical substances, characteristics of aqueous solutions, acids, bases, and gas laws.
- 10806177 Gen Anatomy & Physiology (4 cr.)** Examines basic concepts of human anatomy and physiology as they relate to health sciences. Using a body systems approach, the course emphasizes the interrelationships between structure and function at the gross and microscopic levels of organization of the entire human body. It is intended to prepare health care professionals who need to apply basic concepts of whole body anatomy and physiology to informed decision-making and professional communication with colleagues and patients. (This course also provides the foundation, and is prerequisite to, Advanced Anatomy and Physiology.)

Course Descriptions

10806197 Microbiology (4 cr.)

Examines microbial structure, metabolism, genetics, growth and the relationship between humans and microbes. Addresses disease production, epidemiology, host defense mechanisms and the medical impact of microbes. Presents the role of microbes in the environment, industry, and biotechnology.

10809197 Contemporary Amer Society (3 cr.)

Examine the network of interdependent social systems which affect learners as employees, family members, and citizens. In this interdisciplinary course, learners will study public policy issues which illustrate how our traditional institutions such as family, education, government, work, and media are being changed by global, political, demographic, multicultural, and technological trends. By exploring contemporary issues, learners will expand their use of creative and critical thinking skills in evaluating information, making decisions, advocating positions, and participating in the democratic process.

10809199 Psychology of Human Relations (3 cr.)

Explores the relationship between the general principles of psychology and our everyday lives. Students are given the opportunity to achieve a deepened sense of awareness of themselves and others. This understanding enables students to improve their relationships with others at work, in the family, and in society.

530 - Health Health Information Technology

10501101 Medical Terminology (3 cr.)

Focuses on the component parts of medical terms: prefixes, suffixes and word roots. Students practice formation, analysis and reconstruction of terms. Emphasis on spelling, definition and pronunciation. Introduction to operative, diagnostic, therapeutic and symptomatic terminology of all body systems, as well as systemic and surgical terminology.

10501107 Digital Literacy for Healthcare (2 cr.)

The focus of this course is the use of technology in healthcare. Learners use common business software applications, including word processing, presentation, spreadsheet, and databases. Communication methods using technology are addressed. Learners gain experience with using the electronic health record (EHR). Healthcare EHR security issues, social media use, and digital healthcare resources are examined.

10530159 Healthcare Revenue Management (3 cr.)

Prepares learners to compare and contrast healthcare payers and evaluate the reimbursement cycle and compliance with regulations. Learners assign payment classifications with entry level proficiency using computerized encoding and grouping software.

Course Descriptions

10530161 Health Quality Management (3 cr.)	Explores the programs and processes used to manage and improve healthcare quality. Addresses regulatory requirements as related to performance measurement, assessment, and improvement, required monitoring activities, risk management and patient safety, utilization management, and medical staff credentialing. Emphasizes the use of critical thinking and data analysis skills in the management and reporting of data.
10530162 Foundations of HIM (3 cr.)	Introduces learners to the healthcare delivery system, and the external forces that influence healthcare delivery. Sets an understanding for the expectations and standards related to professional ethics, confidentiality and security of health information. Differentiates the use and structure of healthcare data elements, data standards, and the relationships between them. Prepares learners to collect and maintain health data to ensure a complete and accurate health record.
10530163 Healthcare Stats and Analytics (3 cr.)	Explores the management of medical data for statistical purposes focusing on descriptive and inferential statistics including definition, collection, calculation and compilation of numerical data. Examines data analytics, retrieval, presentation and research methodologies.
10530164 Intro to Health Informatics (3 cr.)	Emphasizes the role of information technology in healthcare through an investigation of the electronic health record (EHR), business, and health information software applications. Learners will develop skills to assist in enterprise information management and database architecture design and implementation.
10530165 Intermediate Coding (3 cr.)	Prepares students to assign ICD and CPT/HCPCS codes supported by medical documentation and official coding guidance to support appropriate reimbursement. Students will participate in CDI activities, including preparation of appropriate physician queries in accordance with compliance guidelines.
10530166 Health Information Technology Capstone (1 cr.)	Explore technical skills and professional attributes desired for the HIM profession, and conduct activities to assess one's own readiness to enter the health information industry.
10530167 Management of HIM Resources (3 cr.)	Examines the principles of management to include planning, organizing, human resource management, directing, and controlling as related to the health information department.
10530178 Healthcare Law & Ethics (2 cr.)	Examines regulations for the content, use, confidentiality, disclosure and retention of health information. An overview of the legal system and ethical issues are addressed.

Course Descriptions

- 10530182 Human Disease for the Health Professions (3 cr.)** Prepares learners to interpret clinical documentation that they will encounter in a variety of healthcare settings. Emphasis is placed on understanding the common disorders and diseases of each body system to include the etiology (cause), signs and symptoms, diagnostic tests and results, and medical treatments and surgical procedures.
- 10530184 CPT Coding (3 cr.)** Prepares learners to assign CPT codes, supported by medical documentation, with entry level proficiency. Learners apply CPT instructional notations, conventions, rules, and official coding guidelines when assigning CPT codes to case studies and actual medical record documentation.
- 10530196 Professional Practice (3 cr.)** Applies previously acquired skills and knowledge by means of clinical experiences in the technical procedures of health record systems and discussion of clinical situations. Student may participate in a supervised clinical experience in healthcare facilities.
- 10530197 ICD Diagnosis Coding (3 cr.)** Prepares students to assign ICD diagnosis codes supported by medical documentation. Students apply instructional notations, conventions, rules, and official coding guidelines when assigning ICD diagnosis codes to case studies and actual medical record documentation.
- 10530199 ICD Procedure Coding (2 cr.)** Prepares students to assign ICD procedure codes supported by medical documentation with entry level proficiency. Students apply instructional notations, conventions, rules, and official coding guidelines when assigning ICD procedure codes to case studies and actual medical record documentation.
- 10801195 Written Communication (3 cr.)** Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
- 10801196 Oral/Interpersonal Comm (3 cr.)** Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
- 10804135 Quantitative Reasoning (3 cr.)** This course is intended to develop analytic reasoning and the ability to solve quantitative problems. Topics to be covered may include: construction & interpretation of graphs; descriptive statistics; geometry & spatial visualizations; math of finance; functions and modeling; probability; and logic. Appropriate use of units and dimensions, estimates, mathematical notation, and available technology will be emphasized throughout the course.

Course Descriptions

10806189 Basic Anatomy (3 cr.)	Examines basic concepts of human anatomy and physiology. Learners explore the structure and function of all body systems.
10809195 Economics (3 cr.)	This course is designed to give an overview of microeconomics, macroeconomics, and international economics. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues.
10809198 Intro to Psychology (3 cr.)	This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.
530 - Health Medical Coding Specialist	
10501101 Medical Terminology (3 cr.)	Focuses on the component parts of medical terms: prefixes, suffixes and word roots. Students practice formation, analysis and reconstruction of terms. Emphasis on spelling, definition and pronunciation. Introduction to operative, diagnostic, therapeutic and symptomatic terminology of all body systems, as well as systemic and surgical terminology.
10501107 Digital Literacy for Healthcare (2 cr.)	The focus of this course is the use of technology in healthcare. Learners use common business software applications, including word processing, presentation, spreadsheet, and databases. Communication methods using technology are addressed. Learners gain experience with using the electronic health record (EHR). Healthcare EHR security issues, social media use, and digital healthcare resources are examined.
10530159 Healthcare Revenue Management (3 cr.)	Prepares learners to compare and contrast healthcare payers and evaluate the reimbursement cycle and compliance with regulations. Learners assign payment classifications with entry level proficiency using computerized encoding and grouping software.
10530162 Foundations of HIM (3 cr.)	Introduces learners to the healthcare delivery system, and the external forces that influence healthcare delivery. Sets an understanding for the expectations and standards related to professional ethics, confidentiality and security of health information. Differentiates the use and structure of healthcare data elements, data standards, and the relationships between them. Prepares learners to collect and maintain health data to ensure a complete and accurate health record.

Course Descriptions

10530165 Intermediate Coding (3 cr.)	Prepares students to assign ICD and CPT/HCPCS codes supported by medical documentation and official coding guidance to support appropriate reimbursement. Students will participate in CDI activities, including preparation of appropriate physician queries in accordance with compliance guidelines.
10530182 Human Disease for the Health Professions (3 cr.)	Prepares learners to interpret clinical documentation that they will encounter in a variety of healthcare settings. Emphasis is placed on understanding the common disorders and diseases of each body system to include the etiology (cause), signs and symptoms, diagnostic tests and results, and medical treatments and surgical procedures.
10530184 CPT Coding (3 cr.)	Prepares learners to assign CPT codes, supported by medical documentation, with entry level proficiency. Learners apply CPT instructional notations, conventions, rules, and official coding guidelines when assigning CPT codes to case studies and actual medical record documentation.
10530197 ICD Diagnosis Coding (3 cr.)	Prepares students to assign ICD diagnosis codes supported by medical documentation. Students apply instructional notations, conventions, rules, and official coding guidelines when assigning ICD diagnosis codes to case studies and actual medical record documentation.
10530199 ICD Procedure Coding (2 cr.)	Prepares students to assign ICD procedure codes supported by medical documentation with entry level proficiency. Students apply instructional notations, conventions, rules, and official coding guidelines when assigning ICD procedure codes to case studies and actual medical record documentation.
10806189 Basic Anatomy (3 cr.)	Examines basic concepts of human anatomy and physiology. Learners explore the structure and function of all body systems.

531 - Emergency Medical Technician

10531169 Emergency Medical Technician - Basic (5 cr.)	Presents and evaluates the knowledge and skills needed by ambulance personnel to respond to and treat cardiac arrest and critical medical and trauma situations. Extrication and ambulance operations are also covered. The course does include CPR certification.
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531 - Emergency Medical Technician - Paramedic

Course Descriptions

10531911 EMS Fundamental (2 cr.)	This course provides the paramedic student with comprehensive knowledge of EMS systems, safety, well-being, legal issues, and ethical issues, with the intended outcome of improving the health of EMS personnel, patients, and the community. The students will obtain fundamental knowledge of public health principles and epidemiology as related to public health emergencies, health promotion, and illness/injury prevention. Introducing students to comprehensive anatomical and medical terminology and abbreviations will foster the development of effective written and oral communications with colleagues and other health care professionals.
10531912 Paramedic Medical Principles (4 cr.)	This course addresses the complex depth of anatomy, physiology, and pathophysiology of major human systems while also introducing the paramedic students to the topics of shock, immunology, and bleeding.
10531913 Advanced Patient Assessment Principles (3 cr.)	This course teaches the paramedic student to integrate scene and patient assessment findings with knowledge of epidemiology and pathophysiology to form a field impression. By utilizing a structured and organized assessment process with knowledge of anatomy, physiology, pathophysiology, life span development, and changes that occur to the human body with time, the students will learn to develop a list of differential diagnoses through clinical reasoning, along with the ability to modify the assessment as necessary to formulate a treatment plan for their patients.
10531914 Advanced Pre-Hospital Pharmacology (3 cr.)	This course provides the paramedic student with the comprehensive knowledge of pharmacology required to formulate and administer a pharmacological treatment plan intended to mitigate emergencies and improve the overall health of the patient.
10531915 Paramedic Respiratory Management (2 cr.)	This course teaches the paramedic student to integrate complex knowledge of anatomy, physiology, and pathophysiology into the assessment to develop and implement a treatment plan with the goal of assuring a patient airway, adequate mechanical ventilation, and respiration for patients of all ages. Specific knowledge pertaining to the respiratory system is also provided to ensure the student is prepared to formulate a field impression and implement a comprehensive treatment plan for a patient with a respiratory complaint.
10531916 Paramedic Cardiology (4 cr.)	Teaches the paramedic student to integrate assessment findings with principles of cardiovascular anatomy, physiology, epidemiology, and pathophysiology to formulate a field impression and implement a comprehensive treatment plan for a patient with a cardiovascular complaint.

Course Descriptions

10531917 Paramedic Clinical/Field 1 (3 cr.)	Provides the student with the opportunity to enhance his or her learning through the practice of paramedicine in field and health care environment experiences with actual patients under the supervision of approved preceptors. Students may also have the opportunity to participate in formal high-fidelity human patient simulator experiences as a part of this course.
10531918 Advanced Emergency Resuscitation (1 cr.)	By teaching Advanced Cardiac Life Support (ACLS) and Pediatric Advanced Life Support (PALS) methodologies and protocols, this course prepares the paramedic student in the integration of comprehensive knowledge of causes and pathophysiology into the management of shock, respiratory failure, respiratory arrest, cardiac arrest, and peri-arrest states with an emphasis on early intervention to prevent respiratory and/or cardiac arrest if possible.
10531919 Paramedic Medical Emergencies (4 cr.)	Teaches the paramedic student to integrate assessment findings with principles of anatomy, physiology, epidemiology, and pathophysiology to formulate a field impression and implement a comprehensive treatment plan for a patient with a medical complaint.
10531920 Paramedic Trauma (3 cr.)	This course teaches the paramedic student to integrate assessment findings with principles of anatomy, physiology, epidemiology, and pathophysiology to formulate a field impression and implement a comprehensive treatment plan for an acutely injured patient.
10531921 Special Patient Populations (3 cr.)	This course teaches the paramedic student to integrate assessment findings with principles of anatomy, physiology, epidemiology, and pathophysiology to formulate a field impression and implement a comprehensive treatment plan for patients with special needs. Gynecological emergencies, along with special considerations in trauma are also included within this course.
10531922 EMS Operations (1 cr.)	This course provides the paramedic student with the knowledge of operational roles and responsibilities to ensure patient, public, and EMS personnel safety.
10531923 Paramedic Capstone (1 cr.)	Provides the student with a final opportunity to incorporate their cognitive knowledge and psychomotor skills through labs and scenario-based practice and evaluations prior to taking the National Registry written and practical examinations. Technical skills attainment for each student will be complied and/or documented within this course as required by the DHS-approved paramedic curriculum.

Course Descriptions

10531924 Paramedic Clinical/Field 2 (4 cr.) Provides the student with the opportunity to enhance his or her learning through the practice of paramedicine in field and health care environment experiences with actual patients under the supervision of approved preceptors. Students may also have the opportunity to participate in formal high-fidelity human patient simulator experiences as a part of this course. Successful completion of this course requires the student to meet all clinical and field competency requirements at the paramedic level as defined by DHS.

10806189 Basic Anatomy (3 cr.) Examines basic concepts of human anatomy and physiology. Learners explore the structure and function of all body systems.

531 - Emergency Medical Technician-Advanced

30531332 Advanced Emergency Medical Technician - Part 1 (2 cr.) Teaches and evaluates the licensed EMT's knowledge and advanced skills including IV therapy, subq. injections and pharmacology. This course meets advanced EMT licensure requirements. Students must have current Wisconsin EMT-Basic license, updated immunizations, current AHA BLS CPR and criminal background checks. Department consent is required.

30531333 Advanced Emergency Medical Technician - Part 2 (2 cr.) Teaches and evaluates the licensed EMT's knowledge and advanced skills including IV therapy, subq. injections and pharmacology. This course meets advanced EMT licensure requirements. Students must have current Wisconsin EMT-Basic License, updated immunizations, current AHA BLS CPR and criminal background checks. Department consent is required.

536 - Pharmacy Services Management - Shared with LTC; LTC awards

10102112 Business, Introduction to (3 cr.) Provides an overview of the variety of activities in the world of business. It focuses on the responsibilities connected with operating a business from both organizational and managerial viewpoints. It also examines the role of government in business.

10104151 Marketing 1, Principles of (3 cr.) Introduces students to the marketing function and process. Techniques for analyzing the marketing environment and understanding customers' needs and wants are explored. Students apply marketing principles to select target markets, develop positioning and create marketing programs to serve markets. Topics include product management and development, pricing, distribution and promotion strategies.

10196191 Supervision (3 cr.) Uses a practical approach to training people in the basics of supervision and management. This course emphasizes the application of theory and covers management functions, the skills needed to perform those functions, the history of management, contemporary management trends, ethics, communication and total quality management.

Course Descriptions

- 10501101 Medical Terminology (3 cr.)** Focuses on the component parts of medical terms: prefixes, suffixes and word roots. Students practice formation, analysis and reconstruction of terms. Emphasis on spelling, definition and pronunciation. Introduction to operative, diagnostic, therapeutic and symptomatic terminology of all body systems, as well as systemic and surgical terminology.
- 10801195 Written Communication (3 cr.)** Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
- 10801196 Oral/Interpersonal Comm (3 cr.)** Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
- 10806112 Principles of Sustainability (3 cr.)** Prepares the student to develop sustainable literacy, analyze the interconnections among the physical and biological sciences and environmental systems, summarize the effects of sustainability on health and well-being, analyze connections among social, economic, and environmental systems, employ energy conservation strategies to reduce the use of fossil fuels, investigate alternative energy options, evaluate options to current waste disposal and recycling in the U.S., and analyze approaches used by your community to promote and implement sustainability.
- 10809166 Intro to Ethics: Theory & App (3 cr.)** This course provides a basic understanding of the theoretical foundations of ethical thought. Diverse ethical perspectives will be used to analyze and compare relevant issues. Students will critically evaluate individual, social and professional standards of behavior, and apply a systematic decision-making process to these situations.
- 10809195 Economics (3 cr.)** This course is designed to give an overview of microeconomics, macroeconomics, and international economics. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues.
- 10809198 Intro to Psychology (3 cr.)** This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.

Course Descriptions

10501101 Medical Terminology (3 cr.) Focuses on the component parts of medical terms: prefixes, suffixes and word roots. Students practice formation, analysis and reconstruction of terms. Emphasis on spelling, definition and pronunciation. Introduction to operative, diagnostic, therapeutic and symptomatic terminology of all body systems, as well as systemic and surgical terminology.

10801196 Oral/Interpersonal Comm (3 cr.) Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.

537 - Therapeutic Therapeutic Massage

31537301 Therapeutic Massage - Musculoskeletal Anatomy (2 cr.) Introduces the anatomy and function of human skeletal and muscular systems. Students learn to identify muscle names, locations, origins, and insertion points. Additionally, students learn and develop palpation skills to assist in appropriate treatment planning.

31537303 Therapeutic Massage Foundations 2 (4 cr.) Building on foundational techniques learned, students continue to develop skill in client documentation, massage techniques, medical terminology, pharmacology and common pathologies. Students are introduced to business fundamentals including topics such as business structures, employment documents, professionalism, finances, state laws, and business software. Additional topics include ethics, professionalism, and communication.

31537305 Therapeutic Massage - Kinesiology (2 cr.) Focuses on further study of the musculoskeletal anatomy and the addition of muscle actions. Students develop skills through palpation and range-of-motion, postural, and gait assessments to incorporate into treatment plans to provide more comprehensive client care. Additional topics include ethics, professionalism, and communication.

31537306 Therapeutic Massage - Specialized Techniques (2 cr.) Students develop techniques for treatment of special populations, are introduced to current and upcoming trends, and gain exposure to therapeutic and spa therapies.

31537310 Therapeutic Massage Foundations 1 (3 cr.) Introduces students to the field of touch therapy and exposes students to major concepts of professional ethics, scope of practice, treatment equipment, safety, sanitation, legal requirements, client documentation, communication, medical terminology, and pharmacology and pathology fundamentals. Students will begin hands-on learning of foundational skills such as draping, positioning, self-care, body mechanics, and basic Swedish massage techniques.

31537311 Anatomy & Physiology - Therapeutic Massage (2 cr.) Introduces chemical composition of the body, structure of cells, tissue types and organ systems. Students study each body system to learn how they work and function together. This course is designed specifically for massage bodywork students.

Course Descriptions

31537312 Therapeutic Massage Clinic (2 cr.) Students provide professional therapeutic massage services to clients and manage business functions of a student clinic. Business topics include ethics and legal requirements, business software, professional marketing, business start-up, client documentation, licensing, and customer service.

543 - Nursing - Associate Degree

10543101 Nursing Fundamentals (2 cr.) This course focuses on basic nursing concepts to provide evidenced-based care to diverse patient populations across the lifespan. Current and historical issues impacting nursing will be explored within the scope of nursing practice. The nursing process will be introduced as a framework for organizing the care of patients.

10543102 Nursing Skills (3 cr.) This course focuses on development of evidence-based clinical skills and physical assessment across the lifespan. Content includes mathematical calculations and conversions related to clinical skills. In addition the course includes techniques related to obtaining a health history and basic physical assessment skills using a body systems approach.

10543103 Nursing Pharmacology (2 cr.) This course introduces the principles of pharmacology, including drug classifications and their effects on the body. Emphasis is on the use of the components of the nursing process when administering medications.

10543104 Nursing Intro Clinical Practice (2 cr.) This introductory clinical course emphasizes basic nursing skills and application of the nursing process in meeting the needs of diverse clients across the lifespan. Emphasis is placed on performing basic nursing skills, the formation of nurse-client relationships, communication, data collection, documentation, and medication administration.

10543105 Nursing Health Alterations (3 cr.) This course elaborates upon the basic concepts of health and illness as presented in Nursing Fundamentals. It applies theories of nursing in the care of patients through the lifespan, utilizing problem solving and critical thinking. This course will provide an opportunity to study conditions affecting different body systems and apply evidence-based nursing interventions. It will also introduce concepts of leadership and management.

10543106 Nursing Health Promotion (3 cr.) This course focuses on topics related to health promotion for individuals and families throughout the lifespan. Topics include reproductive issues, pregnancy, labor and delivery, post-partum, the newborn, and the child, adaptive and maladaptive behaviors applying mental health principles. An emphasis is placed on teaching and supporting healthy lifestyles choices for individuals of all ages. Nutrition, exercise, stress management, empowerment, and risk reduction practices are highlighted. Study of the family will cover dynamics, functions, discipline styles, and stages of development.

Course Descriptions

10543107 Nursing Clinical Care Across the Lifespan (2 cr.)	This clinical experience applies nursing concepts and therapeutic interventions to patients across the lifespan. It also provides an introduction to concepts of teaching and learning. Extending care to include the family is emphasized.
10543108 Intro to Clinical Care Management (2 cr.)	This clinical experience applies nursing concepts and therapeutic nursing interventions to groups of patients across the lifespan. It also provides an introduction to leadership, management, and team building.
10543109 Nursing Complex Health Alterations I (3 cr.)	Complex Health Alterations I prepares the learner to provide and evaluate care for patients across the lifespan with alterations in cardiovascular, respiratory, endocrine, and hematologic systems as well as patients with fluid/electrolyte and acid-base imbalance, and alterations in comfort.
10543110 Mental Health & Community Concepts (2 cr.)	This course will cover topics related to the delivery of community and mental health care. Specific health needs of individuals, families, and groups will be addressed across the lifespan. Attention will be given to diverse and at-risk populations. Mental health concepts will concentrate on adaptive/maladaptive behaviors and specific mental health disorders. Community resources will be examined in relation to specific types of support offered to racial, ethnic, economically diverse individuals and groups.
10543111 Nursing Intermediate Clinical Practice (3 cr.)	This intermediate level clinical course develops the RN role when working with clients with complex health care needs. A focus of the course is developing skills needed for managing multiple clients across the lifespan and priorities. Using the nursing process, students will gain experience in adapting nursing practice to meet the needs of clients with diverse needs and backgrounds.
10543112 Nursing Advanced Skills (1 cr.)	This course focuses on the development of advanced clinical skills across the lifespan. Content includes advanced intravenous skills, blood product administration, chest tube systems, basic electrocardiogram interpretation and nasogastric/feeding tube insertion.
10543113 Nursing Complex Health Alterations II (3 cr.)	Complex Health Alterations II prepares the learner to provide and evaluate care for patients across the lifespan with alterations in the immune, neuro-sensory, musculoskeletal, gastrointestinal, hepatobiliary, renal/urinary, reproductive systems and shock, burns and trauma. The learner will also focus on management of care for patients with high-risk perinatal conditions and high-risk newborns.
10543114 Nursing Management & Professional Concepts (2 cr.)	This course covers nursing management and professional issues related to the role of the registered nurse. Emphasis is placed on preparing for practice as a registered nurse.

Course Descriptions

10543115 Nursing Advanced Clinical Practice (3 cr.)	This advanced clinical course requires the student to integrate concepts from all previous courses in the management of groups of clients facing complex health alterations. Students will have the opportunity to further develop critical thinking skills using the nursing process in making clinical decisions. Continuity of care through interdisciplinary collaboration is emphasized.
10543116 Nursing Clinical Transition (2 cr.)	This clinical experience integrates all knowledge learned in the previous courses in transitioning to the role of the graduate nurse. The course promotes relatively independent clinical decisions, delegation, and works collaboratively with others to achieve client and organizational outcomes. Continued professional development is fostered.
10801136 English Composition 1 (3 cr.)	Learners develop and apply skills in all aspects of the writing process. Through a variety of learning activities and written documents, learners employ rhetorical strategies, plan, organize and revise content, apply critical reading strategies, locate and evaluate information, integrate and document sources, and apply standardized English language conventions.
10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
10806177 Gen Anatomy & Physiology (4 cr.)	Examines basic concepts of human anatomy and physiology as they relate to health sciences. Using a body systems approach, the course emphasizes the interrelationships between structure and function at the gross and microscopic levels of organization of the entire human body. It is intended to prepare health care professionals who need to apply basic concepts of whole body anatomy and physiology to informed decision-making and professional communication with colleagues and patients. (This course also provides the foundation, and is prerequisite to, Advanced Anatomy and Physiology.)

Course Descriptions

10806179 Adv Anatomy & Physiology (4 cr.) Advanced Anatomy and Physiology is the second semester in a two-semester sequence in which normal human anatomy and physiology are studied using a body systems approach with emphasis on the interrelationships between form and function at the gross and microscopic levels of organization. Instructional delivery within a classroom and laboratory setting. Experimentation within a science lab will include analysis of cellular metabolism, the individual components of body systems such as the nervous, neuro-muscular, cardiovascular, and urinary. Continued examination of homeostatic mechanisms and their relationship to fluid, electrolyte, acid-base balance and blood. Integration of genetics to human reproduction and development are also included in this course.

10806197 Microbiology (4 cr.) Examines microbial structure, metabolism, genetics, growth and the relationship between humans and microbes. Addresses disease production, epidemiology, host defense mechanisms and the medical impact of microbes. Presents the role of microbes in the environment, industry, and biotechnology.

10809188 Developmental Psychology (3 cr.) Developmental Psychology is the study of human development throughout the lifespan. This course explores developmental theory and research with an emphasis on the interactive nature of the biological, cognitive, and psychosocial changes that affect the individual conception to death. Application activities and critical thinking skills will enable students to gain an increased knowledge and understanding of themselves and others.

10809196 Intro to Sociology (3 cr.) Introduces students to the fundamental sociological concepts, including sociological perspectives, research methods, the significance of culture in society, and the socialization process. Other topics include deviance, the impact of groups on behavior, societal inequities, global changes, the role of social institutions, and social stratification.

10809198 Intro to Psychology (3 cr.) This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.

543 - Nursing - Associate Degree Pathway

10543109 Nursing Complex Health Alterations I (3 cr.) Complex Health Alterations I prepares the learner to provide and evaluate care for patients across the lifespan with alterations in cardiovascular, respiratory, endocrine, and hematologic systems as well as patients with fluid/electrolyte and acid-base imbalance, and alterations in comfort.

Course Descriptions

10543110 Mental Health & Community Concepts (2 cr.)	This course will cover topics related to the delivery of community and mental health care. Specific health needs of individuals, families, and groups will be addressed across the lifespan. Attention will be given to diverse and at-risk populations. Mental health concepts will concentrate on adaptive/maladaptive behaviors and specific mental health disorders. Community resources will be examined in relation to specific types of support offered to racial, ethnic, economically diverse individuals and groups.
10543111 Nursing Intermediate Clinical Practice (3 cr.)	This intermediate level clinical course develops the RN role when working with clients with complex health care needs. A focus of the course is developing skills needed for managing multiple clients across the lifespan and priorities. Using the nursing process, students will gain experience in adapting nursing practice to meet the needs of clients with diverse needs and backgrounds.
10543112 Nursing Advanced Skills (1 cr.)	This course focuses on the development of advanced clinical skills across the lifespan. Content includes advanced intravenous skills, blood product administration, chest tube systems, basic electrocardiogram interpretation and nasogastric/feeding tube insertion.
10543113 Nursing Complex Health Alterations II (3 cr.)	Complex Health Alterations II prepares the learner to provide and evaluate care for patients across the lifespan with alterations in the immune, neuro-sensory, musculoskeletal, gastrointestinal, hepatobiliary, renal/urinary, reproductive systems and shock, burns and trauma. The learner will also focus on management of care for patients with high-risk perinatal conditions and high-risk newborns.
10543114 Nursing Management & Professional Concepts (2 cr.)	This course covers nursing management and professional issues related to the role of the registered nurse. Emphasis is placed on preparing for practice as a registered nurse.
10543115 Nursing Advanced Clinical Practice (3 cr.)	This advanced clinical course requires the student to integrate concepts from all previous courses in the management of groups of clients facing complex health alterations. Students will have the opportunity to further develop critical thinking skills using the nursing process in making clinical decisions. Continuity of care through interdisciplinary collaboration is emphasized.
10543116 Nursing Clinical Transition (2 cr.)	This clinical experience integrates all knowledge learned in the previous courses in transitioning to the role of the graduate nurse. The course promotes relatively independent clinical decisions, delegation, and works collaboratively with others to achieve client and organizational outcomes. Continued professional development is fostered.

Course Descriptions

- 10543118 LPN to ADN Pathway (1 cr.)** Designed to promote success for licensed practical nurses entering the third semester of the ADN program. Concepts are reviewed and then expanded upon. The course emphasizes five learning plans: calculating mathematical problems, physical assessment, fluid and electrolyte balance, nursing process, and nursing skills.
- 10801136 English Composition 1 (3 cr.)** Learners develop and apply skills in all aspects of the writing process. Through a variety of learning activities and written documents, learners employ rhetorical strategies, plan, organize and revise content, apply critical reading strategies, locate and evaluate information, integrate and document sources, and apply standardized English language conventions.
- 10801196 Oral/Interpersonal Comm (3 cr.)** Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
- 10806177 Gen Anatomy & Physiology (4 cr.)** Examines basic concepts of human anatomy and physiology as they relate to health sciences. Using a body systems approach, the course emphasizes the interrelationships between structure and function at the gross and microscopic levels of organization of the entire human body. It is intended to prepare health care professionals who need to apply basic concepts of whole body anatomy and physiology to informed decision-making and professional communication with colleagues and patients. (This course also provides the foundation, and is prerequisite to, Advanced Anatomy and Physiology.)
- 10806179 Adv Anatomy & Physiology (4 cr.)** Advanced Anatomy and Physiology is the second semester in a two-semester sequence in which normal human anatomy and physiology are studied using a body systems approach with emphasis on the interrelationships between form and function at the gross and microscopic levels of organization. Instructional delivery within a classroom and laboratory setting. Experimentation within a science lab will include analysis of cellular metabolism, the individual components of body systems such as the nervous, neuro-muscular, cardiovascular, and urinary. Continued examination of homeostatic mechanisms and their relationship to fluid, electrolyte, acid-base balance and blood. Integration of genetics to human reproduction and development are also included in this course.

Course Descriptions

- 10806197 Microbiology (4 cr.)** Examines microbial structure, metabolism, genetics, growth and the relationship between humans and microbes. Addresses disease production, epidemiology, host defense mechanisms and the medical impact of microbes. Presents the role of microbes in the environment, industry, and biotechnology.
- 10809188 Developmental Psychology (3 cr.)** Developmental Psychology is the study of human development throughout the lifespan. This course explores developmental theory and research with an emphasis on the interactive nature of the biological, cognitive, and psychosocial changes that affect the individual conception to death. Application activities and critical thinking skills will enable students to gain an increased knowledge and understanding of themselves and others.
- 10809196 Intro to Sociology (3 cr.)** Introduces students to the fundamental sociological concepts, including sociological perspectives, research methods, the significance of culture in society, and the socialization process. Other topics include deviance, the impact of groups on behavior, societal inequities, global changes, the role of social institutions, and social stratification.
- 10809198 Intro to Psychology (3 cr.)** This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.
- 31543301 Nursing Fundamentals (2 cr.)** This course focuses on basic nursing concepts to provide evidence-based care to diverse patient populations across the lifespan. Current and historical issues impacting nursing will be explored within the scope of nursing practice. The nursing process will be introduced as a framework for organizing the care of patients.
- 31543302 Nursing Skills (3 cr.)** This course focuses on development of evidence-based clinical skills and physical assessment across the lifespan. Content includes mathematical calculations and conversions related to clinical skills. In addition the course includes techniques related to obtaining a health history and basic physical assessment skills using a body systems approach.
- 31543303 Nursing Pharmacology (2 cr.)** This course introduces the principles of pharmacology, including drug classifications and their effects on the body. Emphasis is on the use of the components of the nursing process when administering medications.

Course Descriptions

31543304 Nursing Intro Clinical Practice (2 cr.)

This introductory clinical course emphasizes basic nursing skills and application of the nursing process in meeting the needs of diverse clients across the lifespan. Emphasis is placed on performing basic nursing skills, the formation of nurse-client relationships, communication, data collection, documentation, and medication administration.

31543305 Nursing Health Alterations (3 cr.)

This course elaborates upon the basic concepts of health and illness as presented in Nursing Fundamentals. It applies theories of nursing in the care of patients through the lifespan, utilizing problem solving and critical thinking. This course will provide an opportunity to study conditions affecting different body systems and apply evidence-based nursing interventions. It will also introduce concepts of leadership and management.

31543306 Nursing Health Promotion (3 cr.)

This course focuses on topics related to health promotion for individuals and families throughout the lifespan. Topics include reproductive issues, pregnancy, labor and delivery, post-partum, the newborn, and the child, adaptive and maladaptive behaviors applying mental health principles. An emphasis is placed on teaching and supporting healthy lifestyles choices for individuals of all ages. Nutrition, exercise, stress management, empowerment, and risk reduction practices are highlighted. Study of the family will cover dynamics, functions, discipline styles, and stages of development.

31543307 Nursing Clinical Care Across the Lifespan (2 cr.)

This clinical experience applies nursing concepts and therapeutic interventions to patients across the lifespan. It also provides an introduction to concepts of teaching and learning. Extending care to include the family is emphasized.

31543308 Intro to Clinical Care Management (2 cr.)

This clinical experience applies nursing concepts and therapeutic nursing interventions to groups of patients across the lifespan. It also provides an introduction to leadership, management, and team building.

543 - Nursing - Paramedic to ADN Pathway

10543109 Nursing Complex Health Alterations I (3 cr.)

Complex Health Alterations I prepares the learner to provide and evaluate care for patients across the lifespan with alterations in cardiovascular, respiratory, endocrine, and hematologic systems as well as patients with fluid/electrolyte and acid-base imbalance, and alterations in comfort.

Course Descriptions

10543110 Mental Health & Community Concepts (2 cr.)	This course will cover topics related to the delivery of community and mental health care. Specific health needs of individuals, families, and groups will be addressed across the lifespan. Attention will be given to diverse and at-risk populations. Mental health concepts will concentrate on adaptive/maladaptive behaviors and specific mental health disorders. Community resources will be examined in relation to specific types of support offered to racial, ethnic, economically diverse individuals and groups.
10543111 Nursing Intermediate Clinical Practice (3 cr.)	This intermediate level clinical course develops the RN role when working with clients with complex health care needs. A focus of the course is developing skills needed for managing multiple clients across the lifespan and priorities. Using the nursing process, students will gain experience in adapting nursing practice to meet the needs of clients with diverse needs and backgrounds.
10543112 Nursing Advanced Skills (1 cr.)	This course focuses on the development of advanced clinical skills across the lifespan. Content includes advanced intravenous skills, blood product administration, chest tube systems, basic electrocardiogram interpretation and nasogastric/feeding tube insertion.
10543113 Nursing Complex Health Alterations II (3 cr.)	Complex Health Alterations II prepares the learner to provide and evaluate care for patients across the lifespan with alterations in the immune, neuro-sensory, musculoskeletal, gastrointestinal, hepatobiliary, renal/urinary, reproductive systems and shock, burns and trauma. The learner will also focus on management of care for patients with high-risk perinatal conditions and high-risk newborns.
10543114 Nursing Management & Professional Concepts (2 cr.)	This course covers nursing management and professional issues related to the role of the registered nurse. Emphasis is placed on preparing for practice as a registered nurse.
10543115 Nursing Advanced Clinical Practice (3 cr.)	This advanced clinical course requires the student to integrate concepts from all previous courses in the management of groups of clients facing complex health alterations. Students will have the opportunity to further develop critical thinking skills using the nursing process in making clinical decisions. Continuity of care through interdisciplinary collaboration is emphasized.
10543116 Nursing Clinical Transition (2 cr.)	This clinical experience integrates all knowledge learned in the previous courses in transitioning to the role of the graduate nurse. The course promotes relatively independent clinical decisions, delegation, and works collaboratively with others to achieve client and organizational outcomes. Continued professional development is fostered.

Course Descriptions

- 10543127 Paramedic to ADN Theory 1 (3 cr.)** Explore how the nursing process is implemented to relate care of patients throughout the lifespan with alterations in cognition, elimination, comfort, grief/loss, mobility, skin integrity, and fluid/electrolyte balance and related principles of pharmacology. (Prerequisite: Accepted in Paramedic-RN Bridge program; Corequisite: 10-543-128, Paramedic to ADN Theory 2)
- 10543128 Paramedic to ADN Theory 2 (3 cr.)** Nursing care of the developing family, including reproductive and mental health issues, pregnancy, labor and delivery, post-partum, the newborn, and child. Integrated understanding of related pharmacology. Study of family dynamics and grief/loss. (Prerequisite: Accepted to Paramedic-RN Bridge program; Corequisite: 10-543-127, Paramedic to ADN Theory 1)
- 10543129 Paramedic to ADN Clinical (2 cr.)** Nursing care of the developing family, including reproductive and mental health issues, pregnancy, labor and delivery, post-partum, the newborn, and child. Integrated understanding of related pharmacology. Study of family dynamics and grief/loss. (Prerequisite: Accepted to Paramedic-RN Bridge program; Corequisite: 10-543-127, Paramedic to ADN Theory 1)
- 10543130 Paramedic to ADN Skills (2 cr.)** Basic nursing skills and Physical Assessment across the lifespan. Includes medication calculations, aseptic technique, wound care, tracheostomy care, suctioning, management of enteral tubes, medication administration, enemas, ostomy care and catheterization. (Prerequisites: Acceptance to Paramedic-RN Bridge program; 10-543-127, Paramedic to ADN Theory 1; 10-543128, Paramedic to ADN Theory 2; Corequisite: 10-543-130, Paramedic to ADN Clinical)
- 10801136 English Composition 1 (3 cr.)** Learners develop and apply skills in all aspects of the writing process. Through a variety of learning activities and written documents, learners employ rhetorical strategies, plan, organize and revise content, apply critical reading strategies, locate and evaluate information, integrate and document sources, and apply standardized English language conventions.
- 10801196 Oral/Interpersonal Comm (3 cr.)** Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.

Course Descriptions

10806177 Gen Anatomy & Physiology (4 cr.) Examines basic concepts of human anatomy and physiology as they relate to health sciences. Using a body systems approach, the course emphasizes the interrelationships between structure and function at the gross and microscopic levels of organization of the entire human body. It is intended to prepare health care professionals who need to apply basic concepts of whole body anatomy and physiology to informed decision-making and professional communication with colleagues and patients. (This course also provides the foundation, and is prerequisite to, Advanced Anatomy and Physiology.)

10806179 Adv Anatomy & Physiology (4 cr.) Advanced Anatomy and Physiology is the second semester in a two-semester sequence in which normal human anatomy and physiology are studied using a body systems approach with emphasis on the interrelationships between form and function at the gross and microscopic levels of organization. Instructional delivery within a classroom and laboratory setting. Experimentation within a science lab will include analysis of cellular metabolism, the individual components of body systems such as the nervous, neuro-muscular, cardiovascular, and urinary. Continued examination of homeostatic mechanisms and their relationship to fluid, electrolyte, acid-base balance and blood. Integration of genetics to human reproduction and development are also included in this course.

10806197 Microbiology (4 cr.) Examines microbial structure, metabolism, genetics, growth and the relationship between humans and microbes. Addresses disease production, epidemiology, host defense mechanisms and the medical impact of microbes. Presents the role of microbes in the environment, industry, and biotechnology.

10809188 Developmental Psychology (3 cr.) Developmental Psychology is the study of human development throughout the lifespan. This course explores developmental theory and research with an emphasis on the interactive nature of the biological, cognitive, and psychosocial changes that affect the individual conception to death. Application activities and critical thinking skills will enable students to gain an increased knowledge and understanding of themselves and others.

10809196 Intro to Sociology (3 cr.) Introduces students to the fundamental sociological concepts, including sociological perspectives, research methods, the significance of culture in society, and the socialization process. Other topics include deviance, the impact of groups on behavior, societal inequities, global changes, the role of social institutions, and social stratification.

Course Descriptions

10809198 Intro to Psychology (3 cr.)

This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.

543 - Nursing Assistant

30543300 Nursing Assistant (3 cr.)

Prepares learners for entry-level employment as assistants to a licensed nurse. During the 120 hour, Wisconsin department of health services approved program, students will be required to demonstrate the following skills: communication, basic nursing assistant and personal care skills, attention to client's rights; and care of clients with dementias. Upon successful completion of the program, the student is eligible to take the Wisconsin Nursing Assistant competency evaluation for employment in nursing homes, hospitals, home health agencies, hospices, CBRF's, assisted living centers and homes for the developmentally disabled.

543 - Nursing Associate Degree - Transfer to Herzing University

10543101 Nursing Fundamentals (2 cr.)

This course focuses on basic nursing concepts to provide evidenced-based care to diverse patient populations across the lifespan. Current and historical issues impacting nursing will be explored within the scope of nursing practice. The nursing process will be introduced as a framework for organizing the care of patients.

10543102 Nursing Skills (3 cr.)

This course focuses on development of evidence-based clinical skills and physical assessment across the lifespan. Content includes mathematical calculations and conversions related to clinical skills. In addition the course includes techniques related to obtaining a health history and basic physical assessment skills using a body systems approach.

10543103 Nursing Pharmacology (2 cr.)

This course introduces the principles of pharmacology, including drug classifications and their effects on the body. Emphasis is on the use of the components of the nursing process when administering medications.

10543104 Nursing Intro Clinical Practice (2 cr.)

This introductory clinical course emphasizes basic nursing skills and application of the nursing process in meeting the needs of diverse clients across the lifespan. Emphasis is placed on performing basic nursing skills, the formation of nurse-client relationships, communication, data collection, documentation, and medication administration.

Course Descriptions

10543105 Nursing Health Alterations (3 cr.)	This course elaborates upon the basic concepts of health and illness as presented in Nursing Fundamentals. It applies theories of nursing in the care of patients through the lifespan, utilizing problem solving and critical thinking. This course will provide an opportunity to study conditions affecting different body systems and apply evidence-based nursing interventions. It will also introduce concepts of leadership and management.
10543106 Nursing Health Promotion (3 cr.)	This course focuses on topics related to health promotion for individuals and families throughout the lifespan. Topics include reproductive issues, pregnancy, labor and delivery, post-partum, the newborn, and the child, adaptive and maladaptive behaviors applying mental health principles. An emphasis is placed on teaching and supporting healthy lifestyles choices for individuals of all ages. Nutrition, exercise, stress management, empowerment, and risk reduction practices are highlighted. Study of the family will cover dynamics, functions, discipline styles, and stages of development.
10543107 Nursing Clinical Care Across the Lifespan (2 cr.)	This clinical experience applies nursing concepts and therapeutic interventions to patients across the lifespan. It also provides an introduction to concepts of teaching and learning. Extending care to include the family is emphasized.
10543108 Intro to Clinical Care Management (2 cr.)	This clinical experience applies nursing concepts and therapeutic nursing interventions to groups of patients across the lifespan. It also provides an introduction to leadership, management, and team building.
10543109 Nursing Complex Health Alterations I (3 cr.)	Complex Health Alterations I prepares the learner to provide and evaluate care for patients across the lifespan with alterations in cardiovascular, respiratory, endocrine, and hematologic systems as well as patients with fluid/electrolyte and acid-base imbalance, and alterations in comfort.
10543110 Mental Health & Community Concepts (2 cr.)	This course will cover topics related to the delivery of community and mental health care. Specific health needs of individuals, families, and groups will be addressed across the lifespan. Attention will be given to diverse and at-risk populations. Mental health concepts will concentrate on adaptive/maladaptive behaviors and specific mental health disorders. Community resources will be examined in relation to specific types of support offered to racial, ethnic, economically diverse individuals and groups.

Course Descriptions

10543111 Nursing Intermediate Clinical Practice (3 cr.)	This intermediate level clinical course develops the RN role when working with clients with complex health care needs. A focus of the course is developing skills needed for managing multiple clients across the lifespan and priorities. Using the nursing process, students will gain experience in adapting nursing practice to meet the needs of clients with diverse needs and backgrounds.
10543112 Nursing Advanced Skills (1 cr.)	This course focuses on the development of advanced clinical skills across the lifespan. Content includes advanced intravenous skills, blood product administration, chest tube systems, basic electrocardiogram interpretation and nasogastric/feeding tube insertion.
10543113 Nursing Complex Health Alterations II (3 cr.)	Complex Health Alterations II prepares the learner to provide and evaluate care for patients across the lifespan with alterations in the immune, neuro-sensory, musculoskeletal, gastrointestinal, hepatobiliary, renal/urinary, reproductive systems and shock, burns and trauma. The learner will also focus on management of care for patients with high-risk perinatal conditions and high-risk newborns.
10543114 Nursing Management & Professional Concepts (2 cr.)	This course covers nursing management and professional issues related to the role of the registered nurse. Emphasis is placed on preparing for practice as a registered nurse.
10543115 Nursing Advanced Clinical Practice (3 cr.)	This advanced clinical course requires the student to integrate concepts from all previous courses in the management of groups of clients facing complex health alterations. Students will have the opportunity to further develop critical thinking skills using the nursing process in making clinical decisions. Continuity of care through interdisciplinary collaboration is emphasized.
10543116 Nursing Clinical Transition (2 cr.)	This clinical experience integrates all knowledge learned in the previous courses in transitioning to the role of the graduate nurse. The course promotes relatively independent clinical decisions, delegation, and works collaboratively with others to achieve client and organizational outcomes. Continued professional development is fostered.
10801136 English Composition 1 (3 cr.)	Learners develop and apply skills in all aspects of the writing process. Through a variety of learning activities and written documents, learners employ rhetorical strategies, plan, organize and revise content, apply critical reading strategies, locate and evaluate information, integrate and document sources, and apply standardized English language conventions.
10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.

Course Descriptions

- 10804189 Introductory Statistics (3 cr.)** Students taking Introductory Statistics display data with graphs, describe distributions with numbers perform correlation and regression analyses, and design experiments. They use probability and distributions to make predictions, estimate parameters, and test hypotheses. They draw inferences about relationships including ANOVA.
- 10806177 Gen Anatomy & Physiology (4 cr.)** Examines basic concepts of human anatomy and physiology as they relate to health sciences. Using a body systems approach, the course emphasizes the interrelationships between structure and function at the gross and microscopic levels of organization of the entire human body. It is intended to prepare health care professionals who need to apply basic concepts of whole body anatomy and physiology to informed decision-making and professional communication with colleagues and patients. (This course also provides the foundation, and is prerequisite to, Advanced Anatomy and Physiology.)
- 10806179 Adv Anatomy & Physiology (4 cr.)** Advanced Anatomy and Physiology is the second semester in a two-semester sequence in which normal human anatomy and physiology are studied using a body systems approach with emphasis on the interrelationships between form and function at the gross and microscopic levels of organization. Instructional delivery within a classroom and laboratory setting. Experimentation within a science lab will include analysis of cellular metabolism, the individual components of body systems such as the nervous, neuro-muscular, cardiovascular, and urinary. Continued examination of homeostatic mechanisms and their relationship to fluid, electrolyte, acid-base balance and blood. Integration of genetics to human reproduction and development are also included in this course.
- 10806197 Microbiology (4 cr.)** Examines microbial structure, metabolism, genetics, growth and the relationship between humans and microbes. Addresses disease production, epidemiology, host defense mechanisms and the medical impact of microbes. Presents the role of microbes in the environment, industry, and biotechnology.
- 10809172 Introduction to Diversity Studies (3 cr.)** This course introduces the study of diversity from a local to a global perspective using a holistic, interdisciplinary approach that encourages exploration and prepares students to work in a diverse environment. The course introduces basic diversity concepts, examines the impact of bias and power differentials among groups, explores the use of culturally responsive communication strategies, and compares forces that shape diversity in an international context.

Course Descriptions

10809188 Developmental Psychology (3 cr.) Developmental Psychology is the study of human development throughout the lifespan. This course explores developmental theory and research with an emphasis on the interactive nature of the biological, cognitive, and psychosocial changes that affect the individual conception to death. Application activities and critical thinking skills will enable students to gain an increased knowledge and understanding of themselves and others.

10809196 Intro to Sociology (3 cr.) Introduces students to the fundamental sociological concepts, including sociological perspectives, research methods, the significance of culture in society, and the socialization process. Other topics include deviance, the impact of groups on behavior, societal inequities, global changes, the role of social institutions, and social stratification.

10809198 Intro to Psychology (3 cr.) This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.

543 - Practical Nursing

10501153 Body Structure and Function (2 cr.) Introduces basic anatomy and physiology of the human body. Students explore the basics of cells and cell chemistry and build on that knowledge to develop an understanding of tissues, organs, and organ systems. Students explore each body system and how systems function under normal (homeostatic) body conditions. Students develop an overall understanding of how the human body operates on a minute to minute, day to day, basis when all systems are functioning properly.

10801136 English Composition 1 (3 cr.) Learners develop and apply skills in all aspects of the writing process. Through a variety of learning activities and written documents, learners employ rhetorical strategies, plan, organize and revise content, apply critical reading strategies, locate and evaluate information, integrate and document sources, and apply standardized English language conventions.

10801196 Oral/Interpersonal Comm (3 cr.) Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.

Course Descriptions

- 10809188 Developmental Psychology (3 cr.)** Developmental Psychology is the study of human development throughout the lifespan. This course explores developmental theory and research with an emphasis on the interactive nature of the biological, cognitive, and psychosocial changes that affect the individual conception to death. Application activities and critical thinking skills will enable students to gain an increased knowledge and understanding of themselves and others.
- 31543301 Nursing Fundamentals (2 cr.)** This course focuses on basic nursing concepts to provide evidence-based care to diverse patient populations across the lifespan. Current and historical issues impacting nursing will be explored within the scope of nursing practice. The nursing process will be introduced as a framework for organizing the care of patients.
- 31543302 Nursing Skills (3 cr.)** This course focuses on development of evidence-based clinical skills and physical assessment across the lifespan. Content includes mathematical calculations and conversions related to clinical skills. In addition the course includes techniques related to obtaining a health history and basic physical assessment skills using a body systems approach.
- 31543303 Nursing Pharmacology (2 cr.)** This course introduces the principles of pharmacology, including drug classifications and their effects on the body. Emphasis is on the use of the components of the nursing process when administering medications.
- 31543304 Nursing Intro Clinical Practice (2 cr.)** This introductory clinical course emphasizes basic nursing skills and application of the nursing process in meeting the needs of diverse clients across the lifespan. Emphasis is placed on performing basic nursing skills, the formation of nurse-client relationships, communication, data collection, documentation, and medication administration.
- 31543305 Nursing Health Alterations (3 cr.)** This course elaborates upon the basic concepts of health and illness as presented in Nursing Fundamentals. It applies theories of nursing in the care of patients through the lifespan, utilizing problem solving and critical thinking. This course will provide an opportunity to study conditions affecting different body systems and apply evidence-based nursing interventions. It will also introduce concepts of leadership and management.

Course Descriptions

31543306 Nursing Health Promotion (3 cr.) This course focuses on topics related to health promotion for individuals and families throughout the lifespan. Topics include reproductive issues, pregnancy, labor and delivery, post-partum, the newborn, and the child, adaptive and maladaptive behaviors applying mental health principles. An emphasis is placed on teaching and supporting healthy lifestyles choices for individuals of all ages. Nutrition, exercise, stress management, empowerment, and risk reduction practices are highlighted. Study of the family will cover dynamics, functions, discipline styles, and stages of development.

31543307 Nursing Clinical Care Across the Lifespan (2 cr.) This clinical experience applies nursing concepts and therapeutic interventions to patients across the lifespan. It also provides an introduction to concepts of teaching and learning. Extending care to include the family is emphasized.

31543308 Intro to Clinical Care Management (2 cr.) This clinical experience applies nursing concepts and therapeutic nursing interventions to groups of patients across the lifespan. It also provides an introduction to leadership, management, and team building.

545 - Developmental Disabilities Braille Transcription

30533300 Braille Transcription I (3 cr.) Introduces the Braille system, with contractions and their usage, and the rules of Braille through short-form words. It also covers the means of producing Braille including slate and stylus, Perkins Manual Braille and computer-assisted Braille transcription software.

30533301 Braille Transcription II (3 cr.) Uses Braille transcription software as the only mode of transcription. Abbreviations, letter signs and symbols, Roman numerals, italics and asterisk transcription are emphasized.

30533302 Braille Manuscript Writing (3 cr.) Prepares learners to submit a trial manuscript of approximately 35 Braille pages. The manuscript is to resemble a complete Braille book. Submission of this manuscript to the Library of Congress is required as part of certification in literary Braille.

30533303 Braille Communication Skills (1 cr.) Provides the fundamentals of language skills as they relate to Braille transcription. Usage, grammar and punctuation rules are emphasized and applied.

550 - Substance Use Disorder Substance Abuse Counselor Education

10550202 Foundations of Case Management (3 cr.) Introduction to case management techniques and processes. Incorporates intake assessment techniques, service planning techniques, referral processes, coordination of care, and discharge processes determined by a multidisciplinary team approach. Includes client self-determination and autonomy. Incorporates clinical documentation requirements and processes.

Course Descriptions

10550203 Overview of Mental Health Disorders (3 cr.)	Provides an overview to the history, diagnosis, treatment strategies, legal and ethical considerations, and documentation of mental health conditions. Focus is on understanding the mental health conditions that co-occur with substance use disorders.
10550204 Group Facilitation (3 cr.)	An introduction to theory and practice of group dynamics and processes. Includes ethical considerations, effective group leadership, and stages of group development. Also includes demonstration of group facilitation skills, clinical documentation, co-facilitation strategies, reflective practitioner techniques, and group formation.
10550207 Psychopharmacology (3 cr.)	Overview of psychopharmacology including drug categorization history, drug categorization, and drug classification. Includes analysis of neurophysiology of the brain and endocrine system, effects of substances on the body, analysis of delivery systems, and analysis of medical aspects of SUDs. Also includes etiology of addiction, psychopharmacological aspects of withdrawal management, analysis of medications used to treat SUDs and mental health disorders, and SUD medical impacts on the body.
10550208 SUDC Assessment, Diagnosis and Treatment (3 cr.)	Explore the core components of substance use disorder treatment. Apply the core practice dimensions of Substance Use Disorder Counseling. Evaluate process for SUD clients for the purpose of developing treatment plans and documenting the treatment process.
550 - Substance Use Disorder Substance Abuse Counselor in Training	
10550200 Introduction to the SUDC Profession (3 cr.)	Explore characteristics that are incorporated into substance use counseling and practice. Determine personal values, beliefs, strengths and weaknesses. Analyze the eight practice dimensions used to effectively treat substance use disorders: Clinical Evaluation; Treatment Planning; Referral; Service Coordination; Counseling; Patient, Family and Community Education; Documentation; and Professional and Ethical Responsibilities. Evaluate legal and ethical issues surrounding substance use counseling. Evaluate Information about Wisconsin licensing for substance use counseling.
10550201 Understanding Substance Use (3 cr.)	Explore the bio-psych social dynamics of substance use. Examine treatment approaches, models, and screening criteria. Examine substances of abuse, history of SUDs, and their impact on the individual and society.

Course Descriptions

10550206 Introduction to Interviewing and Counseling Skills (3 cr.)

Analyze foundational skills in the counseling relationship. Analyze the stages of the helping processes and the roles professionals play in the processes. Analyze the importance of establishing therapeutic relationships. Apply basic counseling techniques. Apply interviewing and counseling skills through mock counseling sessions and personal experience reflections. Examine issues of boundaries and ethics.

10550210 Boundaries & Ethics - Helping Professions (3 cr.)

Evaluate the ethical codes of the helping professions. Examine professional boundaries related to the helping professions. Incorporate ethical standards into decision making processes. Examine ethical considerations related to professional standards for the helping professions. Examine ethical considerations related to state and federal regulations for the helping professions. Examine the ethical considerations related to professional self-care.

550 - Substance Use Disorder Substance Use Disorder Counseling

10550124 SUDC Clinical Preparation (2 cr.)

Prepares the learner for the internship experience. Resumes will be developed and interviewing techniques explored for placement positions. The learner will complete the application process with the Department of Safety and Professional Services (DSPS) for their SAC-IT credential. This course will explore emerging trends that are occurring with substances, treatment methods, and facilities within the substance use counseling disorder profession.

10550138 Cross-Cultural Counseling (3 cr.)

Provides specific treatment alternatives for a variety of clients and their effectiveness. Develops the skills to value and understand the context and world views of people different from themselves. Categories of diverse populations discussed include gender, minority/ethnic cultures, gay and lesbian clients, differently abled clients, and clients in the criminal justice system.

10550200 Introduction to the SUDC Profession (3 cr.)

Explore characteristics that are incorporated into substance use counseling and practice. Determine personal values, beliefs, strengths and weaknesses. Analyze the eight practice dimensions used to effectively treat substance use disorders: Clinical Evaluation; Treatment Planning; Referral; Service Coordination; Counseling; Patient, Family and Community Education; Documentation; and Professional and Ethical Responsibilities. Evaluate legal and ethical issues surrounding substance use counseling. Evaluate Information about Wisconsin licensing for substance use counseling.

10550201 Understanding Substance Use (3 cr.)

Explore the bio-psych social dynamics of substance use. Examine treatment approaches, models, and screening criteria. Examine substances of abuse, history of SUDs, and their impact on the individual and society.

Course Descriptions

10550202 Foundations of Case Management (3 cr.)	Introduction to case management techniques and processes. Incorporates intake assessment techniques, service planning techniques, referral processes, coordination of care, and discharge processes determined by a multidisciplinary team approach. Includes client self-determination and autonomy. Incorporates clinical documentation requirements and processes.
10550203 Overview of Mental Health Disorders (3 cr.)	Provides an overview to the history, diagnosis, treatment strategies, legal and ethical considerations, and documentation of mental health conditions. Focus is on understanding the mental health conditions that co-occur with substance use disorders.
10550204 Group Facilitation (3 cr.)	An introduction to theory and practice of group dynamics and processes. Includes ethical considerations, effective group leadership, and stages of group development. Also includes demonstration of group facilitation skills, clinical documentation, co-facilitation strategies, reflective practitioner techniques, and group formation.
10550205 Counseling Theory (3 cr.)	Summarize the history of, and explore the primary concepts within, the major approaches to counseling. Explore the empirical foundations of each theory. Examine application of theories to counseling. Review specific techniques of each theoretical approach. Examine the role of the counselor within each theoretical approach. Explore the role of the counselor, the scope of practice, and the ethical implications in counseling.
10550206 Introduction to Interviewing and Counseling Skills (3 cr.)	Analyze foundational skills in the counseling relationship. Analyze the stages of the helping processes and the roles professionals play in the processes. Analyze the importance of establishing therapeutic relationships. Apply basic counseling techniques. Apply interviewing and counseling skills through mock counseling sessions and personal experience reflections. Examine issues of boundaries and ethics.
10550207 Psychopharmacology (3 cr.)	Overview of psychopharmacology including drug categorization history, drug categorization, and drug classification. Includes analysis of neurophysiology of the brain and endocrine system, effects of substances on the body, analysis of delivery systems, and analysis of medical aspects of SUDs. Also includes etiology of addiction, psychopharmacological aspects of withdrawal management, analysis of medications used to treat SUDs and mental health disorders, and SUD medical impacts on the body.

Course Descriptions

10550208 SUDC Assessment, Diagnosis and Treatment (3 cr.)	Explore the core components of substance use disorder treatment. Apply the core practice dimensions of Substance Use Disorder Counseling. Evaluate process for SUD clients for the purpose of developing treatment plans and documenting the treatment process.
10550209 Family Systems (3 cr.)	Provides a broad understanding of family systems theory and practice relevant to the human services field. Focus is on evaluating the communication and interaction patterns and applying interventions and strategies.
10550210 Boundaries & Ethics - Helping Professions (3 cr.)	Evaluate the ethical codes of the helping professions. Examine professional boundaries related to the helping professions. Incorporate ethical standards into decision making processes. Examine ethical considerations related to professional standards for the helping professions. Examine ethical considerations related to state and federal regulations for the helping professions. Examine the ethical considerations related to professional self-care.
10550211 Clinical Experience I (3 cr.)	Immersive experience with an agency including supervised practice in the 12 core functions. Integrates the knowledge, theory, skills, and professional behaviors learned in the two previous semesters of coursework. Emphasis on gaining first-hand knowledge and refine previously acquired skills to gain a greater understanding of self and the helping professions.
10550212 Clinical Experience II (3 cr.)	Immersion experience with an agency including supervised practice in the 12 core functions. Integrates the knowledge, theory, skills, and professional behaviors learned in previous courses and refined in Clinical I immersion experience. Emphasis on applying previously acquired knowledge and skills and gaining a greater understanding of self and the helping professions through first-hand experience.
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.

Course Descriptions

10806198 Human Biology (4 cr.) This is an introductory course that emphasizes the structure of the human body and the functional interrelationships of the body's systems. Consideration is given to the human body and disease, human genetics, human ecology, and the role that humans play in the environment. The course consists of 3 hours of lecture and 2 hours of lab per week. Note: This course does not meet requirements for or substitute for General Anatomy and Physiology or Anatomy & Physiology I and II.

10809196 Intro to Sociology (3 cr.) Introduces students to the fundamental sociological concepts, including sociological perspectives, research methods, the significance of culture in society, and the socialization process. Other topics include deviance, the impact of groups on behavior, societal inequities, global changes, the role of social institutions, and social stratification.

10809198 Intro to Psychology (3 cr.) This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.

602 - Automotive Automotive and Light Duty Truck Technician

10602100 Automotive Maintenance and Light Repair 1 (4 cr.) Focuses on developing skills in professionalism, safety, and the use of basic and power tools. Students are introduced to the automotive service industry and learn to use both comprehensive and manufacturer's service information to perform vehicle maintenance in 9 Automotive Service Excellence (ASE) areas.

10602101 Automotive Maintenance and Light Repair 2 (4 cr.) Focuses on developing the skills needed to diagnose, service and repair vehicle braking systems with an introduction to ABS. Includes the development of skills needed to perform maintenance and repair of chassis and driveline related items.

10602102 Automotive Maintenance and Light Repair 3 (4 cr.) Focuses on developing the skills needed to diagnose, service and repair electrical and electronic systems. Learners apply Ohm's Law to basic electrical circuit diagnosis. Develops skills needed to diagnose, service, and repair electrical and electronic systems, including batteries, starting, charging, and lighting systems, and computer control systems.

10602105 Automotive Maintenance and Light Repair 4 (4 cr.) Focuses on developing the skills needed to diagnose, service and repair steering and suspension systems including wheel alignment procedures. Course includes maintenance and light repair of hybrid vehicles, heating, ventilation, and air conditioning as well as supplemental inflatable restraints.

Course Descriptions

10602111 Advanced Electrical Automotive (4 cr.)	Provides students with the fundamental knowledge needed to diagnose, service, and repair electrical and electronic systems—computer fundamentals, network communications, power accessories, and air bags. Systems include anti-lock brakes, vehicle stability enhancements, and electronic steering and suspension systems. Students will perform diagnostic procedures and apply problem-solving techniques associated with electronically controlled systems.
10602113 Alternative Fuels (4 cr.)	Prepares students with the knowledge needed to service and test the growing number of hybrid vehicles. Emphasizes safety precautions used during testing of high-voltage and electrical machines. This course will also cover compressed natural gas and diesel vehicles.
10602114 Automotive Heating, Ventilation, and Air Conditioning (4 cr.)	Provides the student with the knowledge and skills needed to service and repair heating, cooling, and air conditioning systems. Automatic and dual zone climate control systems will also be covered. Students will learn and practice proper handling of R134a/ 1234YF refrigerants and will also be Federal 609 certified to perform automotive refrigerant repairs.
10602117 Automatic Transaxles and Transmissions (4 cr.)	Focuses on developing the skills needed to diagnose, service, and repair automatic transmissions/transaxles including overhaul procedures.
10602118 Engine Mechanical (4 cr.)	Focuses on developing the skills needed to diagnose, service and repair internal combustion engines. Emphasis is placed on in-vehicle repairs including engine lubrication systems and out-of-vehicle engine repair including overhaul procedures.
10602121 Manual Transmissions (4 cr.)	Focuses on developing the skills needed to diagnose, service, and repair clutches, manual transmissions/transaxle, differentials, four-wheel drive/all-wheel drive, and drive axles.
10602126 Powertrain Management 1 (4 cr.)	Provides students with fundamental knowledge in automotive computer controlled engine management systems. Focuses on developing the skills needed to diagnose, service, and repair fuel, emission, and ignition control systems. Students will perform diagnostic procedures and apply problem-solving techniques associated with engine performance and drivability.
10602129 Powertrain Management 2 (4 cr.)	Teaches students to diagnose and repair engine performance concerns. This course will focus on computerized engine management systems, enhanced emissions, and engine control sensors.
10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.

Course Descriptions

10806173 Applied Science for Transportation (1 cr.)

Engages students in hands-on activities relating the science principles involved with technical measurement, heating and cooling, fluid properties, electricity, and mechanical advantage to applications in the transportation industry.

10809199 Psychology of Human Relations (3 cr.)

Explores the relationship between the general principles of psychology and our everyday lives. Students are given the opportunity to achieve a deepened sense of awareness of themselves and others. This understanding enables students to improve their relationships with others at work, in the family, and in society.

602 - Automotive Automotive Maintenance & Light Repair Technician

10602100 Automotive Maintenance and Light Repair 1 (4 cr.)

Focuses on developing skills in professionalism, safety, and the use of basic and power tools. Students are introduced to the automotive service industry and learn to use both comprehensive and manufacturer's service information to perform vehicle maintenance in 9 Automotive Service Excellence (ASE) areas.

10602101 Automotive Maintenance and Light Repair 2 (4 cr.)

Focuses on developing the skills needed to diagnose, service and repair vehicle braking systems with an introduction to ABS. Includes the development of skills needed to perform maintenance and repair of chassis and driveline related items.

10602102 Automotive Maintenance and Light Repair 3 (4 cr.)

Focuses on developing the skills needed to diagnose, service and repair electrical and electronic systems. Learners apply Ohm's Law to basic electrical circuit diagnosis. Develops skills needed to diagnose, service, and repair electrical and electronic systems, including batteries, starting, charging, and lighting systems, and computer control systems.

10602105 Automotive Maintenance and Light Repair 4 (4 cr.)

Focuses on developing the skills needed to diagnose, service and repair steering and suspension systems including wheel alignment procedures. Course includes maintenance and light repair of hybrid vehicles, heating, ventilation, and air conditioning as well as supplemental inflatable restraints.

602 - Automotive Automotive Quick Service Technician

10602100 Automotive Maintenance and Light Repair 1 (4 cr.)

Focuses on developing skills in professionalism, safety, and the use of basic and power tools. Students are introduced to the automotive service industry and learn to use both comprehensive and manufacturer's service information to perform vehicle maintenance in 9 Automotive Service Excellence (ASE) areas.

602 - Automotive Automotive Service Management

Course Descriptions

10602152 Automotive Service Consulting (3 cr.)

Examines the responsibilities and procedures associated with the multi-faceted role of an automotive service consultant. It provides an understanding of how service techniques are used to maximize customer satisfaction and profitability. Content follows guidelines established by ASE for Automotive Service Consultant (C1) certification, and integration with Oral/Interpersonal Comm reinforces the students' communication skills.

10602153 Automotive Service Management (3 cr.)

Explores the duties and practices assigned to service managers in the successful operation of an automotive service facility. The success of any organization most often depends on the execution and management of such strategic issues as business development, personnel and fiscal operations. Integration with Psychology of Human Relations (10-809-199) provides a unique perspective on the personnel processes from recruitment of employees to supervision and performance assessment.

10801196E Oral/Interpersonal Comm - Auto (3 cr.)

Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.

10809199E Psychology of Human Relations - Auto (3 cr.)

Explores the relationship between the general principles of psychology and our everyday lives. Students are given the opportunity to achieve a deepened sense of awareness of themselves and others. This understanding enables students to improve their relationships with others at work, in the family, and in society.

602 - Automotive Technician - Imports

10602100 Automotive Maintenance and Light Repair 1 (4 cr.)

Focuses on developing skills in professionalism, safety, and the use of basic and power tools. Students are introduced to the automotive service industry and learn to use both comprehensive and manufacturer's service information to perform vehicle maintenance in 9 Automotive Service Excellence (ASE) areas.

10602101 Automotive Maintenance and Light Repair 2 (4 cr.)

Focuses on developing the skills needed to diagnose, service and repair vehicle braking systems with an introduction to ABS. Includes the development of skills needed to perform maintenance and repair of chassis and driveline related items.

10602102 Automotive Maintenance and Light Repair 3 (4 cr.)

Focuses on developing the skills needed to diagnose, service and repair electrical and electronic systems. Learners apply Ohm's Law to basic electrical circuit diagnosis. Develops skills needed to diagnose, service, and repair electrical and electronic systems, including batteries, starting, charging, and lighting systems, and computer control systems.

Course Descriptions

10602105 Automotive Maintenance and Light Repair 4 (4 cr.)	Focuses on developing the skills needed to diagnose, service and repair steering and suspension systems including wheel alignment procedures. Course includes maintenance and light repair of hybrid vehicles, heating, ventilation, and air conditioning as well as supplemental inflatable restraints.
10602111 Advanced Electrical Automotive (4 cr.)	Provides students with the fundamental knowledge needed to diagnose, service, and repair electrical and electronic systems—computer fundamentals, network communications, power accessories, and air bags. Systems include anti-lock brakes, vehicle stability enhancements, and electronic steering and suspension systems. Students will perform diagnostic procedures and apply problem-solving techniques associated with electronically controlled systems.
10602114 Automotive Heating, Ventilation, and Air Conditioning (4 cr.)	Provides the student with the knowledge and skills needed to service and repair heating, cooling, and air conditioning systems. Automatic and dual zone climate control systems will also be covered. Students will learn and practice proper handling of R134a/ 1234YF refrigerants and will also be Federal 609 certified to perform automotive refrigerant repairs.
10602130 Import Alternative Fuels (4 cr.)	Prepares students with the knowledge needed to service and test the growing number of hybrid vehicles. Emphasizes safety precautions used during testing of high-voltage and electrical machines. This course will also cover some of the emerging market of diesel vehicles.
10602131 Import Automatic Transaxles (4 cr.)	Introduces students to the base knowledge and skills needed to service import automatic transaxles. Principles of hydraulics and electronic controls applied to import automatic transaxles are covered. Students overhaul a variety of current import units.
10602132 Import Engine Management 1 (4 cr.)	Focuses on diagnosis and repair of import engine performance concerns, specifically related to base engine, fuel, and ignition system. Emissions systems will also be introduced.
10602133 Import Engine Management 2 (4 cr.)	Teaches students to diagnose and repair import engine performance concerns. This course will focus on computerized engine management systems, enhanced emissions, and engine control sensors.
10602136 Import Engine Mechanical (4 cr.)	Focuses on developing the skills needed to diagnose, service, and repair import internal combustion engines. Emphasis is placed on in-vehicle repairs including engine lubrication systems and out-of-vehicle engine repair including overhaul procedures.
10602138 Import Manual Transmissions (4 cr.)	Introduces students to the basic knowledge and skills needed to repair and service import manual transmissions, drivelines, differentials, and axles.

Course Descriptions

10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
10806173 Applied Science for Transportation (1 cr.)	Engages students in hands-on activities relating the science principles involved with technical measurement, heating and cooling, fluid properties, electricity, and mechanical advantage to applications in the transportation industry.
10809199 Psychology of Human Relations (3 cr.)	Explores the relationship between the general principles of psychology and our everyday lives. Students are given the opportunity to achieve a deepened sense of awareness of themselves and others. This understanding enables students to improve their relationships with others at work, in the family, and in society.
602 - Automotive Technology	
10602100 Automotive Maintenance and Light Repair 1 (4 cr.)	Focuses on developing skills in professionalism, safety, and the use of basic and power tools. Students are introduced to the automotive service industry and learn to use both comprehensive and manufacturer's service information to perform vehicle maintenance in 9 Automotive Service Excellence (ASE) areas.
10602101 Automotive Maintenance and Light Repair 2 (4 cr.)	Focuses on developing the skills needed to diagnose, service and repair vehicle braking systems with an introduction to ABS. Includes the development of skills needed to perform maintenance and repair of chassis and driveline related items.
10602102 Automotive Maintenance and Light Repair 3 (4 cr.)	Focuses on developing the skills needed to diagnose, service and repair electrical and electronic systems. Learners apply Ohm's Law to basic electrical circuit diagnosis. Develops skills needed to diagnose, service, and repair electrical and electronic systems, including batteries, starting, charging, and lighting systems, and computer control systems.
10602105 Automotive Maintenance and Light Repair 4 (4 cr.)	Focuses on developing the skills needed to diagnose, service and repair steering and suspension systems including wheel alignment procedures. Course includes maintenance and light repair of hybrid vehicles, heating, ventilation, and air conditioning as well as supplemental inflatable restraints.
10602111 Advanced Electrical Automotive (4 cr.)	Provides students with the fundamental knowledge needed to diagnose, service, and repair electrical and electronic systems—computer fundamentals, network communications, power accessories, and air bags. Systems include anti-lock brakes, vehicle stability enhancements, and electronic steering and suspension systems. Students will perform diagnostic procedures and apply problem-solving techniques associated with electronically controlled systems.

Course Descriptions

10602113 Alternative Fuels (4 cr.)	Prepares students with the knowledge needed to service and test the growing number of hybrid vehicles. Emphasizes safety precautions used during testing of high-voltage and electrical machines. This course will also cover compressed natural gas and diesel vehicles.
10602114 Automotive Heating, Ventilation, and Air Conditioning (4 cr.)	Provides the student with the knowledge and skills needed to service and repair heating, cooling, and air conditioning systems. Automatic and dual zone climate control systems will also be covered. Students will learn and practice proper handling of R134a/ 1234YF refrigerants and will also be Federal 609 certified to perform automotive refrigerant repairs.
10602117 Automatic Transaxles and Transmissions (4 cr.)	Focuses on developing the skills needed to diagnose, service, and repair automatic transmissions/transaxles including overhaul procedures.
10602118 Engine Mechanical (4 cr.)	Focuses on developing the skills needed to diagnose, service and repair internal combustion engines. Emphasis is placed on in-vehicle repairs including engine lubrication systems and out-of-vehicle engine repair including overhaul procedures.
10602121 Manual Transmissions (4 cr.)	Focuses on developing the skills needed to diagnose, service, and repair clutches, manual transmissions/transaxle, differentials, four-wheel drive/all-wheel drive, and drive axles.
10602126 Powertrain Management 1 (4 cr.)	Provides students with fundamental knowledge in automotive computer controlled engine management systems. Focuses on developing the skills needed to diagnose, service, and repair fuel, emission, and ignition control systems. Students will perform diagnostic procedures and apply problem-solving techniques associated with engine performance and drivability.
10602129 Powertrain Management 2 (4 cr.)	Teaches students to diagnose and repair engine performance concerns. This course will focus on computerized engine management systems, enhanced emissions, and engine control sensors.
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.

Course Descriptions

10804113 College Technical Math 1A (3 cr.) Topics include: solving linear equations; graphing; percent; proportions; measurement systems; computational geometry; and right triangle trigonometry. Emphasis will be on the application of skills to technical problems. Successful completion of College Technical Mathematics 1A and College Technical Mathematics 1B is the equivalent of College Technical Mathematics 1.

10806173 Applied Science for Transportation (1 cr.) Engages students in hands-on activities relating the science principles involved with technical measurement, heating and cooling, fluid properties, electricity, and mechanical advantage to applications in the transportation industry.

10809195 Economics (3 cr.) This course is designed to give an overview of microeconomics, macroeconomics, and international economics. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues.

10809199 Psychology of Human Relations (3 cr.) Explores the relationship between the general principles of psychology and our everyday lives. Students are given the opportunity to achieve a deepened sense of awareness of themselves and others. This understanding enables students to improve their relationships with others at work, in the family, and in society.

602 - Automotive Automotive Technology - Imports

10602100 Automotive Maintenance and Light Repair 1 (4 cr.) Focuses on developing skills in professionalism, safety, and the use of basic and power tools. Students are introduced to the automotive service industry and learn to use both comprehensive and manufacturer's service information to perform vehicle maintenance in 9 Automotive Service Excellence (ASE) areas.

10602101 Automotive Maintenance and Light Repair 2 (4 cr.) Focuses on developing the skills needed to diagnose, service and repair vehicle braking systems with an introduction to ABS. Includes the development of skills needed to perform maintenance and repair of chassis and driveline related items.

10602102 Automotive Maintenance and Light Repair 3 (4 cr.) Focuses on developing the skills needed to diagnose, service and repair electrical and electronic systems. Learners apply Ohm's Law to basic electrical circuit diagnosis. Develops skills needed to diagnose, service, and repair electrical and electronic systems, including batteries, starting, charging, and lighting systems, and computer control systems.

10602105 Automotive Maintenance and Light Repair 4 (4 cr.) Focuses on developing the skills needed to diagnose, service and repair steering and suspension systems including wheel alignment procedures. Course includes maintenance and light repair of hybrid vehicles, heating, ventilation, and air conditioning as well as supplemental inflatable restraints.

Course Descriptions

10602111 Advanced Electrical Automotive (4 cr.)	Provides students with the fundamental knowledge needed to diagnose, service, and repair electrical and electronic systems-- computer fundamentals, network communications, power accessories, and air bags. Systems include anti-lock brakes, vehicle stability enhancements, and electronic steering and suspension systems. Students will perform diagnostic procedures and apply problem-solving techniques associated with electronically controlled systems.
10602114 Automotive Heating, Ventilation, and Air Conditioning (4 cr.)	Provides the student with the knowledge and skills needed to service and repair heating, cooling, and air conditioning systems. Automatic and dual zone climate control systems will also be covered. Students will learn and practice proper handling of R134a/ 1234YF refrigerants and will also be Federal 609 certified to perform automotive refrigerant repairs.
10602130 Import Alternative Fuels (4 cr.)	Prepares students with the knowledge needed to service and test the growing number of hybrid vehicles. Emphasizes safety precautions used during testing of high-voltage and electrical machines. This course will also cover some of the emerging market of diesel vehicles.
10602131 Import Automatic Transaxles (4 cr.)	Introduces students to the base knowledge and skills needed to service import automatic transaxles. Principles of hydraulics and electronic controls applied to import automatic transaxles are covered. Students overhaul a variety of current import units.
10602132 Import Engine Management 1 (4 cr.)	Focuses on diagnosis and repair of import engine performance concerns, specifically related to base engine, fuel, and ignition system. Emissions systems will also be introduced.
10602133 Import Engine Management 2 (4 cr.)	Teaches students to diagnose and repair import engine performance concerns. This course will focus on computerized engine management systems, enhanced emissions, and engine control sensors.
10602136 Import Engine Mechanical (4 cr.)	Focuses on developing the skills needed to diagnose, service, and repair import internal combustion engines. Emphasis is placed on in-vehicle repairs including engine lubrication systems and out-of-vehicle engine repair including overhaul procedures.
10602138 Import Manual Transmissions (4 cr.)	Introduces students to the basic knowledge and skills needed to repair and service import manual transmissions, drivelines, differentials, and axles.
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.

Course Descriptions

10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
10804113 College Technical Math 1A (3 cr.)	Topics include: solving linear equations; graphing; percent; proportions; measurement systems; computational geometry; and right triangle trigonometry. Emphasis will be on the application of skills to technical problems. Successful completion of College Technical Mathematics 1A and College Technical Mathematics 1B is the equivalent of College Technical Mathematics 1.
10806173 Applied Science for Transportation (1 cr.)	Engages students in hands-on activities relating the science principles involved with technical measurement, heating and cooling, fluid properties, electricity, and mechanical advantage to applications in the transportation industry.
10809195 Economics (3 cr.)	This course is designed to give an overview of microeconomics, macroeconomics, and international economics. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues.
10809199 Psychology of Human Relations (3 cr.)	Explores the relationship between the general principles of psychology and our everyday lives. Students are given the opportunity to achieve a deepened sense of awareness of themselves and others. This understanding enables students to improve their relationships with others at work, in the family, and in society.
602 - Automotive Technology GM ASEP	
10602100 Automotive Maintenance and Light Repair 1 (4 cr.)	Focuses on developing skills in professionalism, safety, and the use of basic and power tools. Students are introduced to the automotive service industry and learn to use both comprehensive and manufacturer's service information to perform vehicle maintenance in 9 Automotive Service Excellence (ASE) areas.
10602101 Automotive Maintenance and Light Repair 2 (4 cr.)	Focuses on developing the skills needed to diagnose, service and repair vehicle braking systems with an introduction to ABS. Includes the development of skills needed to perform maintenance and repair of chassis and driveline related items.
10602102 Automotive Maintenance and Light Repair 3 (4 cr.)	Focuses on developing the skills needed to diagnose, service and repair electrical and electronic systems. Learners apply Ohm's Law to basic electrical circuit diagnosis. Develops skills needed to diagnose, service, and repair electrical and electronic systems, including batteries, starting, charging, and lighting systems, and computer control systems.

Course Descriptions

10602105 Automotive Maintenance and Light Repair 4 (4 cr.)	Focuses on developing the skills needed to diagnose, service and repair steering and suspension systems including wheel alignment procedures. Course includes maintenance and light repair of hybrid vehicles, heating, ventilation, and air conditioning as well as supplemental inflatable restraints.
10602120 Fuel Systems - ASEP (3 cr.)	Focuses on the entire General Motors gasoline and diesel fuel systems, including fuel tanks, gauges, fuel pump modules, fuel quality and fuel injection. Other topics covered will be the operation of all fuel-related components, emission related computer controlled sensors, and their operation as it relates to fuel delivery and emission systems.
10602122 Driveline/Manual Transmission - ASEP (3 cr.)	Designed to give an ASEP student the basic knowledge and skills needed to service General Motors manual transmissions, drivelines, differentials and axles. The ASEP student receives hands-on practice in the repair of these units.
10602134 Automotive Engines Measuring - ASEP (3 cr.)	Focuses on General Motors automotive engine design and construction. All engine parts such as pistons, connecting rods, camshafts and crank shafts are studied and measured in a lab setting. The use of micrometers, plastic gauge and other measuring equipment will be demonstrated and then used by the student.
10602135 Dealership Co-op 2 - ASEP (2 cr.)	Emphasizes a period of involved employment at a General Motors Dealership carried out through an organized student learning plan. Its purpose is to allow students to gain meaningful occupational experience in the automotive field.
10602137 Dealership Co-op 3 - ASEP (2 cr.)	Emphasizes a period of involved employment at a General Motors Dealership carried out through an organized student learning plan. Its purpose is to allow students to gain meaningful occupational experience in the automotive field.
10602139 Dealership Co-op 4 - ASEP (2 cr.)	Emphasizes a period of involved employment at a General Motors Dealership carried out through an organized student learning plan. Its purpose is to allow students to gain meaningful occupational experience in the automotive field.
10602141 Dealership Co-op 1 - ASEP (2 cr.)	Provides a period of employment at a General Motors dealership that follows a student learning plan. It is designed to give students occupational experience in the automotive field.
10602148 GM ASEP Automatic Transmission/Transaxle (2 cr.)	Designed to give an ASEP student the basic knowledge and skills needed to service General Motors automatic transmissions/transaxles. Principles of hydraulics, diagnostics, and electronic controls applied to GM automatic transmissions are covered. Students overhaul a variety of modern GM automatic transmissions.

Course Descriptions

10602164 Automotive HVAC-ASEP (2 cr.)	Focuses on developing the skills needed to diagnose, service, and repair General Motors climate control systems including heating, cooling, and air distribution. Students will learn and practice proper handling of R134a/ 1234YF refrigerants and will also be Federal 609 certified to perform automotive refrigerant repairs.
10602165 Advanced Chassis Systems-ASEP (2 cr.)	Focuses on developing the skills needed to diagnose, service, and repair General Motors antilock brake, vehicle stability enhancement, and electronic steering and suspension systems.
10602199 Electrical and Electronics 1-GM (3 cr.)	Designed to provide the ASEP student with basic knowledge of automotive electrical applications. Including basic electrical theory, meters, electronic component theory and testing, servicing and repair of General Motors wiring, terminals, and communication systems.
10602200 Electrical and Electronics 2-GM (2 cr.)	Designed to provide the ASEP student with the knowledge of automotive electrical applications. General Motors electrical components, terminology, computer control functions and Hybrid/EV vehicle strategies.
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
10804113 College Technical Math 1A (3 cr.)	Topics include: solving linear equations; graphing; percent; proportions; measurement systems; computational geometry; and right triangle trigonometry. Emphasis will be on the application of skills to technical problems. Successful completion of College Technical Mathematics 1A and College Technical Mathematics 1B is the equivalent of College Technical Mathematics 1.
10806173 Applied Science for Transportation (1 cr.)	Engages students in hands-on activities relating the science principles involved with technical measurement, heating and cooling, fluid properties, electricity, and mechanical advantage to applications in the transportation industry.

Course Descriptions

10809195 Economics (3 cr.)

This course is designed to give an overview of microeconomics, macroeconomics, and international economics. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues.

10809199 Psychology of Human Relations (3 cr.)

Explores the relationship between the general principles of psychology and our everyday lives. Students are given the opportunity to achieve a deepened sense of awareness of themselves and others. This understanding enables students to improve their relationships with others at work, in the family, and in society.

602 - Automotive GM Express Service Technician

10602100 Automotive Maintenance and Light Repair 1 (4 cr.)

Focuses on developing skills in professionalism, safety, and the use of basic and power tools. Students are introduced to the automotive service industry and learn to use both comprehensive and manufacturer's service information to perform vehicle maintenance in 9 Automotive Service Excellence (ASE) areas.

10602101 Automotive Maintenance and Light Repair 2 (4 cr.)

Focuses on developing the skills needed to diagnose, service and repair vehicle braking systems with an introduction to ABS. Includes the development of skills needed to perform maintenance and repair of chassis and driveline related items.

10602102 Automotive Maintenance and Light Repair 3 (4 cr.)

Focuses on developing the skills needed to diagnose, service and repair electrical and electronic systems. Learners apply Ohm's Law to basic electrical circuit diagnosis. Develops skills needed to diagnose, service, and repair electrical and electronic systems, including batteries, starting, charging, and lighting systems, and computer control systems.

10602105 Automotive Maintenance and Light Repair 4 (4 cr.)

Focuses on developing the skills needed to diagnose, service and repair steering and suspension systems including wheel alignment procedures. Course includes maintenance and light repair of hybrid vehicles, heating, ventilation, and air conditioning as well as supplemental inflatable restraints.

10602141 Dealership Co-op 1 - ASEP (2 cr.)

Provides a period of employment at a General Motors dealership that follows a student learning plan. It is designed to give students occupational experience in the automotive field.

605 - Electronic Engineering Technology

10605106 Solder Rework & Repair-IPC Prep (1 cr.)

Teaches students how to produce high-quality soldered connections that meet the IPC standard regarding materials, methods and verification.

Course Descriptions

10605111 AC Circuits 2-Electronics/EET (1 cr.)	Covers the application of basic theory to AC circuits. Topics include sine-wave description, reactance, phase and fundamental AC power concepts. RC, RL and RLC circuits using complex numbers are analyzed. Laboratory and computer analysis activities are performed to enhance the theory.
10605113 DC Circuits 4 (1 cr.)	Examines the theory, application and design of series/parallel circuits including loaded and unloaded voltage dividers. Circuit analysis methods such as superposition, Thevenin, and Norton theorems are introduced. Circuit simulation software is used to aid in the analysis and prediction of circuit operation. Laboratory activities are performed to verify the theory.
10605116 AC Circuits 3 (1 cr.)	Explores reactive circuits containing resistors, capacitors, and inductors. Passive filter circuits are introduced along with resonant circuits. Circuit simulation is implemented to aid in circuit analysis.
10605119 Linear Electronics (3 cr.)	Emphasizes modern linear integrated circuits (ICs). Covered in depth are the operational amplifier IC and its circuit applications: amplifying, comparing, summing, wave shaping, regulating, oscillating and filtering. Laboratory time is spent simulating and constructing circuits and evaluating and troubleshooting circuitry.
10605122 PCB Assembly Systems (1 cr.)	Trains students to work with surface mount technology (SMT) equipment used in electronic circuit manufacturing, including stencils and foils, pick and place machines, and reflow ovens. They will learn machine setup, calibration, and quality control.
10605125 Semiconductors 3 (1 cr.)	Covers DC and AC analysis of amplifiers. Bypass and coupling capacitor functions, along with circuit limitations due to circuit configuration, are also examined.
10605130 Digital 1 (1 cr.)	Introduces digital electronics including Boolean, the operation of logic gates, and the theory of combination logic circuits. Laboratory activities are performed to verify the theory.
10605131 Digital Electronics 2 - Electronics/EET (1 cr.)	Examines data manual usage. This course introduces programmable logic devices and Karnaugh mapping. It also covers encoders, decoders, multiplexers, binary adders and parity circuits. Laboratory activities are performed to verify the theory.
10605141 LabVIEW Graphical Programming (2 cr.)	Introduces LabVIEW, which is used to write programs using the computer's serial or USB port and computer-based data acquisition cards. Projects introduce features of the acquisition boards and the software package. Students write programs for data acquisition applications involving digital input and output, analog input and output, and serial input and output.

Course Descriptions

10605146 Embedded Programming 2 (1 cr.)	Continues with topics from Embedded Programming 1 and further explores embedded controller systems operation, architecture, and programming. Students will lay the groundwork for future courses and electronic projects while experimenting with programming language concepts and interfacing.
10605148 Embedded Programming 3 (1 cr.)	Continues with topics from Embedded Programming 2 and further explores embedded controller systems operation, architecture and programming. Successful students will exit this course prepared to develop and implement larger projects involving more advanced topics relative to microcontrollers.
10605155 Product Testing/Systems (1 cr.)	Addresses programming on Test and Measurement with the graphical programming language LabVIEW. Students create electronic product testing, instrumentation, data acquisition, and data analysis.
10605156 CAD for Electronics (1 cr.)	Introduces students to computer-aided design (CAD) techniques used in the electronics field. Students learn the basics of the AutoCAD software, including the draw, modify, dimension and plotting sets of commands. Students acquire the skills needed to create an electronics symbols library and to draw electronic schematics.
10605159 PCB Design (1 cr.)	Teaches students to design a printed circuit board using the OrCAD/Cadence design suite. Provides an overview of the Electronic Design Automation (EDA) tools used in industry today.
10605160 Microcontroller Interfacing (3 cr.)	Explores mid-range microcontroller functionality using C programming to develop embedded applications. Projects will utilize many of the microcontroller features such as USB, Ethernet, scheduled and non-scheduled interrupts, analog to digital conversion, etc.
10605162 Electronics Final Project (2 cr.)	A final research and construction project that includes written and oral presentations and is centered on a microprocessor based circuit application. This capstone course will apply much of your previous coursework on an individual or group project as determined by the instructor.
10605165 Electronic Communications 1 (1 cr.)	Covers the basics of electronic communications, to include protocol, wireless transmission, and application. Also covers industrial networks and hardware to include cables and connections.
10620142 Motors and Drives 2 (1 cr.)	Introduces AC Generators, Three Phase, and Single Phase motors. Starting methods for AC motors, including AC Drives, will be introduced. Control wiring and reversing circuits will also be introduced. Students will wire for Synchronous and Induction motor operation.

Course Descriptions

10620148 Motors and Drives 1 (1 cr.)	Introduces DC motors and generators, along with DC Drives. Students will wire both separately-excited and self-excited DC generators. Counter Electromotive Force (CEMF) will be used to explain the operational principles of DC motors and generators. Various DC motor types will be introduced. Motor types include series, shunt, and compound motors.
10628151 PLC 1 (1 cr.)	Introduces Programmable Logic Controllers (PLC)s and RSLogix 500 Programming Software. The PLC hardware will consist of Allen Bradley products. Students use the RSLogix 500 programming software to create logical solutions for real world applications. The applications will require students to create, download, and debug programs in RSLogix 500.
10628152 PLC 2 (1 cr.)	Introduces Programmable Logic Controllers (PLC)s and Studio 5000 (formerly RSLogix5000) Programming Software. The PLC hardware will consist of Allen Bradley products. Students will configure Ethernet communications to connect to the Allen Bradley PLC hardware. Students will use Studio 5000 programming software to create logical solutions for real world applications. The applications will require students to create, download, and debug their programs. Students will study industrial sensors and their uses. Students will wire and test sensor operations.
10660110 DC Circuits 1 (1 cr.)	Introduces electrical safety and program procedures. The course covers Ohm's Law, power law, series circuits, and voltmeter, ammeter and ohmmeter applications. Number powers, electronic notations, circuit component recognition and diagrams, resistor power ratings, color code, Kirchhoff's voltage law and atomic structure are also included.
10660111 DC Circuits 2 (1 cr.)	Covers basic parallel and series-parallel circuits and their properties. Examines the theory, application and design of series-parallel circuits, such as loaded and unloaded voltage dividers and the Wheatstone bridge. Laboratory activities are performed to verify the theory.
10660112 DC Circuits 3 (1 cr.)	Covers capacitors and inductors including time constants and instantaneous voltage and current values of RC and RL circuits. Applications and various types of capacitors and inductors are discussed. Magnetism, electromagnetism, and devices, such as relays and solenoids, are also presented. Laboratory activities are performed to verify the theory.
10660114 AC Circuits 1 (1 cr.)	Covers AC waveforms and different voltage values including Peak, RMS, Average and Peak to Peak. The operation of transformers is also included. Laboratory activities using the oscilloscope are performed to verify the theory.

Course Descriptions

10660128 Semiconductors 1 (1 cr.)	Introduces semiconductor materials, the operation of diodes, Zener diodes and the construction of rectifier and filter circuits. Fundamental transistor construction and operation is also introduced. Laboratory experiments are performed to verify the theory.
10660129 Semiconductors 2 (1 cr.)	Introduces students to transistor operation as a switch, SCR, Triac, and Operational Amplifier operation and application.
10660151 Embedded Programming 1 (1 cr.)	Introduces students to embedded computer systems through exploration of microcontroller operation, architecture and programming. Students will lay the groundwork for future courses and electronic projects while experimenting with programming language concepts and basic interfacing.
10660163 Construction Techniques (1 cr.)	Introduces the use of common hand tools used by technicians. The safe use and application of hand and power tools is practiced through construction projects. Quality workmanship and craftsmanship are emphasized.
10660181 Technical Software Essentials (1 cr.)	Introduces students to the Microsoft Office family of products. Students will create and edit Word documents, Excel spreadsheets, and Access databases.
10660184 Computer Systems & Networks 1 (1 cr.)	Focuses on computer terms, computer hardware, computer functions, security and operating systems. Basic networking concepts are also introduced.
10660185 Computer Systems & Networks 2 (1 cr.)	Introduces unique industrial networking media types. Ethernet networks including switches, routers, protocols, security, remote access, and wireless technology in an industrial setting.
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
10804118 Intermediate Algebra with Applications (4 cr.)	This course offers algebra content with applications and an introduction to functions and complex numbers. Content builds upon the arithmetic of real numbers by using variable equations to solve problems. Topics include graphing and finding algebraic solutions for linear equations and inequalities, quadratic, exponential, polynomial, radical, and rational equations.

Course Descriptions

10804197 College Algebra and Trigonometry with Applications (5 cr.)

This course covers skills needed for success in Calculus and many application areas at the baccalaureate level. Algebra topics include the real and complex number systems, polynomials, exponents, radicals, solving equations and inequalities, relations and functions, systems of equations and inequalities, graphing, and conic sections. Trigonometry topics include the unit circle, trigonometric functions, graphs, identities, equations, inverse functions, solutions of triangles, complex numbers, polar coordinates, and vectors.

10809196 Intro to Sociology (3 cr.)

Introduces students to the fundamental sociological concepts, including sociological perspectives, research methods, the significance of culture in society, and the socialization process. Other topics include deviance, the impact of groups on behavior, societal inequities, global changes, the role of social institutions, and social stratification.

10809198 Intro to Psychology (3 cr.)

This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.

606 - Mechanical Mechanical CAD Drafting

10606141 Introduction to SolidWorks (2 cr.)

Will introduce the student to the basics of the SolidWorks software. Close attention will be paid to properly navigating the interface. Sketching, dimensional and geometric constraints, part modeling, drawing creation, and assembly modeling will all be examined.

10606151 Sketching and the Design Process (1 cr.)

Introduces sketching, which is typically one of the first steps in working out and documenting a design. Almost all initial ideas are hand sketched long before any graphical data is created with the CAD system. Basic sketching techniques and their application to one view, oblique, isometric, and perspective drawings are covered. Lettering techniques are also covered.

10606152 CAD and Geometric Constructions (1 cr.)

Focuses on the very basics of using AutoCAD software. This course will cover the interface and basic drawing, editing, and printing commands. Applying constructive geometrical thinking to solve more complex problems and accurately locate points, edges, and surfaces when the software cannot do so automatically is also covered.

10606153 Multiview Projections (1 cr.)

Covers standard practices of orthographic projection. Best practices for deciding which views to show, how they should be oriented in your drawing, and how to represent key information such as edges, surfaces, vertices, hidden lines, centerlines, and other crucial details are covered.

Course Descriptions

10606154 Section Views and Auxiliary Views (1 cr.)	Explains that often times there are internal features that lie behind other features, and features that lie on inclined and oblique surfaces. This course covers the creation and placement of section and auxiliary views, allowing portrayal of these features. Descriptive geometry techniques for finding piercing points, points of planar intersections, and surface development are also covered.
10606155 Dimensioning and Tolerancing (1 cr.)	Explains that dimensions and notes define the size, location, finish, and other requirements to fully describe what is to be manufactured. These standards are covered in this course. Tolerancing, or making allowances for human ability, material properties, and the manufacturing environment is also covered.
10606156 Threads and Fasteners (1 cr.)	Explains that the ability to properly display various standardized thread forms and fasteners is, naturally, extremely important as most parts ultimately need to be attached to other parts in some manner. This course will show students how to depict and call out these features on a drawing. Both Metric and Unified National Thread series will be covered.
10606157 Gears and Cams (1 cr.)	Covers two concepts used in the creating of motion using mechanical parts, gears and cams. Students will learn the geometry comprising these two important features, find out how they work, and how to depict them on a mechanical drawing.
10606158 Working Drawings (1 cr.)	Covers the methods for producing working drawings utilized by manufacturers when building parts. Tolerances will be used to ensure the proper fit and function of mating parts. Students will learn the requirements of a detailed part drawing, as well as what is required on assembly drawings and weldments. The workings of an engineering office will also be addressed.
10606159 Structural and Piping Drafting (1 cr.)	Will teach students how to create a proper drawing of structures comprised of beams, channels, and tubing. Detailed and schematic piping drawings will also be covered. Students will learn how to draw pipe fittings and how they are assembled to tanks, vats, and other components.
10606160 AutoCAD Mechanical (1 cr.)	Will expose the student to the many automated features built into the AutoCAD Mechanical software. Features such as detailing, hardware and symbol libraries, bill of material generation, adherence to CAD standards, integrated layer management, and smart dimensioning tools will be covered.
10623119 Manufacturing Processes with Lab (4 cr.)	Introduces the manufacturing processes used to cast, form, cut, and join materials including hands-on experience with manual machining, forming, and joining processes. Incorporates print reading and basic metrology skills.

Course Descriptions

10801195 Written Communication (3 cr.) Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.

10801196 Oral/Interpersonal Comm (3 cr.) Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.

10804197 College Algebra and Trigonometry with Applications (5 cr.) This course covers skills needed for success in Calculus and many application areas at the baccalaureate level. Algebra topics include the real and complex number systems, polynomials, exponents, radicals, solving equations and inequalities, relations and functions, systems of equations and inequalities, graphing, and conic sections. Trigonometry topics include the unit circle, trigonometric functions, graphs, identities, equations, inverse functions, solutions of triangles, complex numbers, polar coordinates, and vectors.

606 - Mechanical Mechanical Design Technology

10420120 Metallurgy-Mechanical Design (1 cr.) Presents basic information on ferrous and non-ferrous materials used in the design application. The composition of various material groups are studied, understanding why they are used for specific applications. Consideration will be given to metal properties, and their behavior in specific applications will be explored. The primary heat treatments of ferrous metals will be discussed regarding their use for improving the properties and capabilities of the metal. Terminology is emphasized throughout the course to understand the science and practical language of the subject.

10606109 Geometric Dimensioning and Tolerancing (2 cr.) Provides fundamentals of geometric dimensioning and tolerancing (GD&T) per the ASME Y14.5M standard. The development of the technical knowledge and skills required for application and interpretation of GD&T is the focus of the course. Design requirements for functional gages and other methods used to verify GD&T specifications are also presented.

10606111 Design Problems (4 cr.) Applies the principles and methods used to solve basic design problems. Students prepare preliminary layouts, assembly drawings and detail drawings. CAD experience is required.

Course Descriptions

10606115 Design of Tooling (4 cr.)	Provides a background in the fundamentals of design and the application of jigs, fixtures, gauging devices and stamping dies in the manufacturing process. Students prepare general assembly and detail drawings of tool designs that use commercial tooling components. CAD experience is required.
10606119 Statics and Strength of Materials (3 cr.)	Uses mathematical concepts to determine how forces are distributed through trusses and other rigid structures. Friction and calculation of centroids and moment of inertia are covered. Algebra and other applications of mathematics are used extensively.
10606121 Elements of Machine Design (3 cr.)	Examines a variety of problems involving the principles of design. Topics include direct stress, strain, thermal expansion and stress, beam selection, bending moments, torsion, Mohr's circle, combined stress, column buckling, and beam deflection. Algebra and other applications of mathematics are used extensively.
10606123 Kinematics (4 cr.)	Emphasizes motion analysis of existing mechanisms. Motion characteristics are examined through the use of skeleton diagrams and graphical techniques. Topics include application of skeleton diagrams, angular velocity, linear velocity, velocity polygons, cams, gears and gear trains. CAD experience is required.
10606141 Introduction to SolidWorks (2 cr.)	Will introduce the student to the basics of the SolidWorks software. Close attention will be paid to properly navigating the interface. Sketching, dimensional and geometric constraints, part modeling, drawing creation, and assembly modeling will all be examined.
10606151 Sketching and the Design Process (1 cr.)	Introduces sketching, which is typically one of the first steps in working out and documenting a design. Almost all initial ideas are hand sketched long before any graphical data is created with the CAD system. Basic sketching techniques and their application to one view, oblique, isometric, and perspective drawings are covered. Lettering techniques are also covered.
10606152 CAD and Geometric Constructions (1 cr.)	Focuses on the very basics of using AutoCAD software. This course will cover the interface and basic drawing, editing, and printing commands. Applying constructive geometrical thinking to solve more complex problems and accurately locate points, edges, and surfaces when the software cannot do so automatically is also covered.
10606153 Multiview Projections (1 cr.)	Covers standard practices of orthographic projection. Best practices for deciding which views to show, how they should be oriented in your drawing, and how to represent key information such as edges, surfaces, vertices, hidden lines, centerlines, and other crucial details are covered.

Course Descriptions

10606154 Section Views and Auxiliary Views (1 cr.)	Explains that often times there are internal features that lie behind other features, and features that lie on inclined and oblique surfaces. This course covers the creation and placement of section and auxiliary views, allowing portrayal of these features. Descriptive geometry techniques for finding piercing points, points of planar intersections, and surface development are also covered.
10606155 Dimensioning and Tolerancing (1 cr.)	Explains that dimensions and notes define the size, location, finish, and other requirements to fully describe what is to be manufactured. These standards are covered in this course. Tolerancing, or making allowances for human ability, material properties, and the manufacturing environment is also covered.
10606156 Threads and Fasteners (1 cr.)	Explains that the ability to properly display various standardized thread forms and fasteners is, naturally, extremely important as most parts ultimately need to be attached to other parts in some manner. This course will show students how to depict and call out these features on a drawing. Both Metric and Unified National Thread series will be covered.
10606157 Gears and Cams (1 cr.)	Covers two concepts used in the creating of motion using mechanical parts, gears and cams. Students will learn the geometry comprising these two important features, find out how they work, and how to depict them on a mechanical drawing.
10606158 Working Drawings (1 cr.)	Covers the methods for producing working drawings utilized by manufacturers when building parts. Tolerances will be used to ensure the proper fit and function of mating parts. Students will learn the requirements of a detailed part drawing, as well as what is required on assembly drawings and weldments. The workings of an engineering office will also be addressed.
10606159 Structural and Piping Drafting (1 cr.)	Will teach students how to create a proper drawing of structures comprised of beams, channels, and tubing. Detailed and schematic piping drawings will also be covered. Students will learn how to draw pipe fittings and how they are assembled to tanks, vats, and other components.
10606160 AutoCAD Mechanical (1 cr.)	Will expose the student to the many automated features built into the AutoCAD Mechanical software. Features such as detailing, hardware and symbol libraries, bill of material generation, adherence to CAD standards, integrated layer management, and smart dimensioning tools will be covered.
10623119 Manufacturing Processes with Lab (4 cr.)	Introduces the manufacturing processes used to cast, form, cut, and join materials including hands-on experience with manual machining, forming, and joining processes. Incorporates print reading and basic metrology skills.

Course Descriptions

10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
10804197 College Algebra and Trigonometry with Applications (5 cr.)	This course covers skills needed for success in Calculus and many application areas at the baccalaureate level. Algebra topics include the real and complex number systems, polynomials, exponents, radicals, solving equations and inequalities, relations and functions, systems of equations and inequalities, graphing, and conic sections. Trigonometry topics include the unit circle, trigonometric functions, graphs, identities, equations, inverse functions, solutions of triangles, complex numbers, polar coordinates, and vectors.
10806144 College Physics 2 (3 cr.)	Presents the applications and theory of basic physics principles. This course emphasizes problem solving, laboratory investigation and applications. Topics include periodic motion, wave motion, optics, magnetism, static electricity, DC electricity, AC electricity and electromagnetism.
10809103 Think Critically & Creatively (3 cr.)	Provides instruction about critical and creative thinking that is in high demand in all occupations. Models, theories, and processes provide the foundation for learning logical thinking strategies. Students will apply a systematic approach to problem solving by analyzing the problem, assessing possible solutions, and making effective decisions. In addition, students will generate ideas and analyze complex issues. This course assists students with developing a critical thinking mindset which is essential at every level of personal and professional life.
10809199 Psychology of Human Relations (3 cr.)	Explores the relationship between the general principles of psychology and our everyday lives. Students are given the opportunity to achieve a deepened sense of awareness of themselves and others. This understanding enables students to improve their relationships with others at work, in the family, and in society.
620 - Electro-Mechanical Technology	
10449188 Essentials of Manufacturing Safety (1 cr.)	Provides information on the safety responsibilities of workers within the manufacturing industry. Special emphasis will be placed on common hazards and methods of controls.

Course Descriptions

10620111 Pneumatics 1 (1 cr.)	Provides an introduction to fundamental principles and laws of fluid power, with a focus on pneumatics. Laboratory activities are performed to verify the theory.
10620112 Pneumatics 2 (1 cr.)	Introduces advanced pneumatic and electropneumatic systems. Students examine how pneumatic components operate and how they interact in industrial systems. Laboratory activities are performed to verify the theory.
10620113 Hydraulics 1 (1 cr.)	Provides an introduction to fundamental principles and laws of fluid power, with a focus on hydraulics. Laboratory activities are performed to verify the theory.
10620114 Hydraulics 2 (1 cr.)	Introduces advanced hydraulic and electrohydraulic systems. Students examine how hydraulic components operate and how they interact in industrial systems. Laboratory activities are performed to verify the theory.
10620142 Motors and Drives 2 (1 cr.)	Introduces AC Generators, Three Phase, and Single Phase motors. Starting methods for AC motors, including AC Drives, will be introduced. Control wiring and reversing circuits will also be introduced. Students will wire for Synchronous and Induction motor operation.
10620148 Motors and Drives 1 (1 cr.)	Introduces DC motors and generators, along with DC Drives. Students will wire both separately-excited and self-excited DC generators. Counter Electromotive Force (CEMF) will be used to explain the operational principles of DC motors and generators. Various DC motor types will be introduced. Motor types include series, shunt, and compound motors.
10620164 Elements of Machines 1 (1 cr.)	Emphasizes the mechanical elements of industrial machines. Principles of leveling motors, fasteners, bearings, and couplings are covered. Terminology, selection, and proper installation and maintenance are stressed.
10620165 Elements of Machines 2 (1 cr.)	Emphasizes the mechanical elements of industrial machines. Principles of power transmission, belt drives, and chain drives are covered. Terminology, selection, and proper installation and maintenance are stressed.
10620187 Sensors (1 cr.)	Covers various types of sensors used in industrial operations such as inductive and capacitive proximity detectors, Hall-effect devices and various optical sensing modes. Laboratory activities are performed to verify the theory.
10620188 System Troubleshooting (1 cr.)	Develops troubleshooting skills by using several closed-loop systems on a level and flow process trainer. Students identify faults electrically inserted into this trainer by recognizing symptoms, creating and using flow charts for analysis, and finding the problem with test instruments.
10620189 Electromechanical Systems 1 (1 cr.)	Capstone course that uses the competencies learned throughout the Electromechanical program to operate various systems that interface with each other such as digital, servomechanisms, electro-hydraulic and gear mechanisms. Laboratory activities are performed to verify the theory.

Course Descriptions

10620190 Advanced AC/DC Variable Speed Drives (1 cr.)	Covers graphical programming and various communication techniques of current and vector drives. A multifunctional trainer is configured to demonstrate complex master/slave drive functions, on-line monitoring of drive performance, and to build troubleshooting skills.
10620192 Advanced Programmable Logic Controllers 1 (1 cr.)	An introduction to the Siemens S7-200 Programmable Controller. Course work will include controller start-up procedures, examination of data types and memory modes, the basic instruction set for programming ladder logic, and hands-on activities used to reinforce the areas studied.
10620193 Advanced Programmable Logic Controllers 2 (1 cr.)	A continuation of the study of the Siemens S7-200 Programmable Controller. Examination of advanced ladder diagram instructions and industrial PLC applications is the emphasis of the course. Hands-on activities programming the PLC for specific industrial applications are used to reinforce the areas studied.
10628101 Concepts of Programming for Technicians (1 cr.)	Introduces students to programming fundamentals necessary in automation related careers. Students will discuss proper programming structures including flow chart and pseudocode programming. Students will create and troubleshoot programs.
10628113 Electronic Construction Applications (1 cr.)	Introduces industrial control panel design, layout, mounting, and wiring of industrial relays, push buttons, pilot lights, plc, fuses, transformers, 3 phase motor, and motor starters are applied. Quality installation and NEC standards are emphasized throughout the course.
10628151 PLC 1 (1 cr.)	Introduces Programmable Logic Controllers (PLC)s and RSLogix 500 Programming Software. The PLC hardware will consist of Allen Bradley products. Students use the RSLogix 500 programming software to create logical solutions for real world applications. The applications will require students to create, download, and debug programs in RSLogix 500.
10628152 PLC 2 (1 cr.)	Introduces Programmable Logic Controllers (PLC)s and Studio 5000 (formerly RSLogix5000) Programming Software. The PLC hardware will consist of Allen Bradley products. Students will configure Ethernet communications to connect to the Allen Bradley PLC hardware. Students will use Studio 5000 programming software to create logical solutions for real world applications. The applications will require students to create, download, and debug their programs. Students will study industrial sensors and their uses. Students will wire and test sensor operations.
10628153 PLC 3 (1 cr.)	Continues using the Allen Bradley PLC hardware platform with Studio 5000 programming software. Introduces Analog I/O and scaling for program interfacing. Scaling with math instructions, data handling with FIFO/LIFO instructions, and sequencer SQI/SQO instructions are all introduced.

Course Descriptions

10628154 PLC 4 (1 cr.)	Introduces the IEC 61131-3 compatible languages within Studio 5000. Students are introduced to Structured Text (ST), Sequential Function Charts (SFC), and Function Block Diagrams (FBD). Additionally, students learn remote I/O.
10628155 PLC 5 (1 cr.)	Introduces motion programming within Studio 5000. Students will configure, tune, program, and troubleshoot a complete motion control system. The course will cover homing, moving, jogging, and coordinated axis instructions of a motion device. The course introduces advanced PLC to PLC communication, advanced data types, and using Add-On instructions.
10628159 Operator Interfaces (1 cr.)	Introduces Human Machine Interface (HMI) development. Students create Displays, HMI tags, Basic Objects, Object Animations, Global Objects, Alarms, and Trending.
10628161 Robotics 1 (1 cr.)	Introduces basic robotic programming techniques. Hands on experience will include safety, system setup, jogging, events, tools, coordinate systems, and robot movement types.
10628162 Robotics 2 (1 cr.)	Introduces advanced programming techniques. Hands on experience will include robotic input and output routines, program flow, variables/math instructions, offsets instructions, and operator communication instructions.
10628171 Instrumentation & Process Control 1 (1 cr.)	Introduces Open Loop and Closed Loop control. Students learn about On/Off control, effects of deadband, and common manufacturing processes, which include Batch Processes and Continuous Processes.
10628172 Instrumentation & Process Control 2 (1 cr.)	Introduces Proportional Control using Proportional Band and Proportional Gain. Students apply calibration procedures to correct transmitter output signals, and interpret Piping and Instrumentation Diagrams.
10628173 Instrumentation & Process Control 3 (1 cr.)	Introduces Programmable Logic Controller (PLC) based Proportional Integral and Derivative (PID) Control. Students apply various tuning methods to control closed-loop processes, including flow, level and temperature.
10628187 AutoCAD Fundamentals (1 cr.)	Teaches students to draw, edit, dimension, and plot drawings with the AutoCAD software.
10628188 Blueprint Reading & AutoCAD (1 cr.)	Introduces students to reading both electrical schematics and mechanical prints, while utilizing the AutoCAD software.
10660110 DC Circuits 1 (1 cr.)	Introduces electrical safety and program procedures. The course covers Ohm's Law, power law, series circuits, and voltmeter, ammeter and ohmmeter applications. Number powers, electronic notations, circuit component recognition and diagrams, resistor power ratings, color code, Kirchhoff's voltage law and atomic structure are also included.
10660111 DC Circuits 2 (1 cr.)	Covers basic parallel and series-parallel circuits and their properties. Examines the theory, application and design of series-parallel circuits, such as loaded and unloaded voltage dividers and the Wheatstone bridge. Laboratory activities are performed to verify the theory.

Course Descriptions

10660112 DC Circuits 3 (1 cr.)	Covers capacitors and inductors including time constants and instantaneous voltage and current values of RC and RL circuits. Applications and various types of capacitors and inductors are discussed. Magnetism, electromagnetism, and devices, such as relays and solenoids, are also presented. Laboratory activities are performed to verify the theory.
10660114 AC Circuits 1 (1 cr.)	Covers AC waveforms and different voltage values including Peak, RMS, Average and Peak to Peak. The operation of transformers is also included. Laboratory activities using the oscilloscope are performed to verify the theory.
10660128 Semiconductors 1 (1 cr.)	Introduces semiconductor materials, the operation of diodes, Zener diodes and the construction of rectifier and filter circuits. Fundamental transistor construction and operation is also introduced. Laboratory experiments are performed to verify the theory.
10660129 Semiconductors 2 (1 cr.)	Introduces students to transistor operation as a switch, SCR, Triac, and Operational Amplifier operation and application.
10660170 Ladder Logic & Control Devices (1 cr.)	Introduces hardwired components found in industrial applications used to control simple circuits. Students will learn about switches, relays, contactors, timers, and indicator lamps. Students will use their knowledge of these devices to wire various circuits. Students will use ladder logic diagrams to interconnect and label devices to make complete circuits.
10660181 Technical Software Essentials (1 cr.)	Introduces students to the Microsoft Office family of products. Students will create and edit Word documents, Excel spreadsheets, and Access databases.
10660184 Computer Systems & Networks 1 (1 cr.)	Focuses on computer terms, computer hardware, computer functions, security and operating systems. Basic networking concepts are also introduced.
10660185 Computer Systems & Networks 2 (1 cr.)	Introduces unique industrial networking media types. Ethernet networks including switches, routers, protocols, security, remote access, and wireless technology in an industrial setting.
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.

Course Descriptions

10804113 College Technical Math 1A (3 cr.)	Topics include: solving linear equations; graphing; percent; proportions; measurement systems; computational geometry; and right triangle trigonometry. Emphasis will be on the application of skills to technical problems. Successful completion of College Technical Mathematics 1A and College Technical Mathematics 1B is the equivalent of College Technical Mathematics 1.
10804133 Math & Logic (3 cr.)	Students will apply problem solving techniques from discrete mathematics. Topics include symbolic logic, sets, algebra and base number systems.
10809195 Economics (3 cr.)	This course is designed to give an overview of microeconomics, macroeconomics, and international economics. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues.
10809199 Psychology of Human Relations (3 cr.)	Explores the relationship between the general principles of psychology and our everyday lives. Students are given the opportunity to achieve a deepened sense of awareness of themselves and others. This understanding enables students to improve their relationships with others at work, in the family, and in society.

620 - Electro-Mechanical Electronics Fundamentals

10660110 DC Circuits 1 (1 cr.)	Introduces electrical safety and program procedures. The course covers Ohm's Law, power law, series circuits, and voltmeter, ammeter and ohmmeter applications. Number powers, electronic notations, circuit component recognition and diagrams, resistor power ratings, color code, Kirchhoff's voltage law and atomic structure are also included.
10660111 DC Circuits 2 (1 cr.)	Covers basic parallel and series-parallel circuits and their properties. Examines the theory, application and design of series-parallel circuits, such as loaded and unloaded voltage dividers and the Wheatstone bridge. Laboratory activities are performed to verify the theory.
10660112 DC Circuits 3 (1 cr.)	Covers capacitors and inductors including time constants and instantaneous voltage and current values of RC and RL circuits. Applications and various types of capacitors and inductors are discussed. Magnetism, electromagnetism, and devices, such as relays and solenoids, are also presented. Laboratory activities are performed to verify the theory.
10660114 AC Circuits 1 (1 cr.)	Covers AC waveforms and different voltage values including Peak, RMS, Average and Peak to Peak. The operation of transformers is also included. Laboratory activities using the oscilloscope are performed to verify the theory.

Course Descriptions

10660128 Semiconductors 1 (1 cr.)	Introduces semiconductor materials, the operation of diodes, Zener diodes and the construction of rectifier and filter circuits. Fundamental transistor construction and operation is also introduced. Laboratory experiments are performed to verify the theory.
10660129 Semiconductors 2 (1 cr.)	Introduces students to transistor operation as a switch, SCR, Triac, and Operational Amplifier operation and application.
10660130 Digital Electronics Tech 1 (1 cr.)	Introduces digital electronics, the operation of logic gates, and the theory of combination logic devices such as encoders, decoders, multiplexers, binary adders and parity circuits. Laboratory activities are performed to verify the theory.
10660131 Digital Electronics Tech 2 (1 cr.)	Examines flip-flops, various types of shift registers and counters, arithmetic circuits, and practical application digital devices. Laboratory activities are performed to verify the theory.
10804113 College Technical Math 1A (3 cr.)	Topics include: solving linear equations; graphing; percent; proportions; measurement systems; computational geometry; and right triangle trigonometry. Emphasis will be on the application of skills to technical problems. Successful completion of College Technical Mathematics 1A and College Technical Mathematics 1B is the equivalent of College Technical Mathematics 1.

620 - Electro-Mechanical Instrumentation and Process Control

10628151 PLC 1 (1 cr.)	Introduces Programmable Logic Controllers (PLC)s and RSLogix 500 Programming Software. The PLC hardware will consist of Allen Bradley products. Students use the RSLogix 500 programming software to create logical solutions for real world applications. The applications will require students to create, download, and debug programs in RSLogix 500.
10628152 PLC 2 (1 cr.)	Introduces Programmable Logic Controllers (PLC)s and Studio 5000 (formerly RSLogix5000) Programming Software. The PLC hardware will consist of Allen Bradley products. Students will configure Ethernet communications to connect to the Allen Bradley PLC hardware. Students will use Studio 5000 programming software to create logical solutions for real world applications. The applications will require students to create, download, and debug their programs. Students will study industrial sensors and their uses. Students will wire and test sensor operations.
10628153 PLC 3 (1 cr.)	Continues using the Allen Bradley PLC hardware platform with Studio 5000 programming software. Introduces Analog I/O and scaling for program interfacing. Scaling with math instructions, data handling with FIFO/LIFO instructions, and sequencer SQI/SQO instructions are all introduced.

Course Descriptions

10628171 Instrumentation & Process Control 1 (1 cr.)	Introduces Open Loop and Closed Loop control. Students learn about On/Off control, effects of deadband, and common manufacturing processes, which include Batch Processes and Continuous Processes.
10628172 Instrumentation & Process Control 2 (1 cr.)	Introduces Proportional Control using Proportional Band and Proportional Gain. Students apply calibration procedures to correct transmitter output signals, and interpret Piping and Instrumentation Diagrams.
10628173 Instrumentation & Process Control 3 (1 cr.)	Introduces Programmable Logic Controller (PLC) based Proportional Integral and Derivative (PID) Control. Students apply various tuning methods to control closed-loop processes, including flow, level and temperature.
10660110 DC Circuits 1 (1 cr.)	Introduces electrical safety and program procedures. The course covers Ohm's Law, power law, series circuits, and voltmeter, ammeter and ohmmeter applications. Number powers, electronic notations, circuit component recognition and diagrams, resistor power ratings, color code, Kirchhoff's voltage law and atomic structure are also included.
10660170 Ladder Logic & Control Devices (1 cr.)	Introduces hardwired components found in industrial applications used to control simple circuits. Students will learn about switches, relays, contactors, timers, and indicator lamps. Students will use their knowledge of these devices to wire various circuits. Students will use ladder logic diagrams to interconnect and label devices to make complete circuits.
10804113 College Technical Math 1A (3 cr.)	Topics include: solving linear equations; graphing; percent; proportions; measurement systems; computational geometry; and right triangle trigonometry. Emphasis will be on the application of skills to technical problems. Successful completion of College Technical Mathematics 1A and College Technical Mathematics 1B is the equivalent of College Technical Mathematics 1.
621 - Industrial Welding Basic GMAW Welder	
10442123 GMAW Techniques 1 (2 cr.)	Demonstrates welding on steel sheet metals and plates. Emphasis is placed on axial spray, pulse spray and short circuit mode of transfer. Upon completion of this course, the student will be able to weld in all positions, read basic weld symbols, and have an understanding of written welding procedures.
10621105 Welding/Metal Fab Intro & Safety (1 cr.)	Provides instruction in welding and metal fabrication safety. Students will identify environmental work and personnel hazards common with the industry and proper personal protection methods. Students will also perform common tasks essential to utilization of the welding and metal fabrication lab.
10621108 Weld Print Reading (1 cr.)	Provides practice in reading shop drawings. Topics include orthographic projection, auxiliary views, revolved sections, surface and centerline relationships, isometric drawings, scale drawing and tolerances.

Course Descriptions

10621114 Weld Symbols (1 cr.)

Teaches students to interpret detailed weld symbols using the American Welding Society standard.

621 - Industrial Welding Industrial Welding Technology

10442121 SMAW Techniques 1 (2 cr.)

Covers the process commonly known as stick welding. Upon completion of this course, the student will be able to weld in all positions, read some basic weld symbols, and have a basic understanding of written welding procedures.

10442123 GMAW Techniques 1 (2 cr.)

Demonstrates welding on steel sheet metals and plates. Emphasis is placed on axial spray, pulse spray and short circuit mode of transfer. Upon completion of this course, the student will be able to weld in all positions, read basic weld symbols, and have an understanding of written welding procedures.

10442124 GMAW Techniques 2 (2 cr.)

Teaches students to weld on stainless steel and aluminum sheet metal and plate. The student will be able to differentiate, select proper electrodes, shielding gases, and properly adjust parameters. Emphasis is placed on axial spray, pulse spray and short circuit mode of transfer depending on base metal. Upon completion of this course, the student will be able to weld in all positions, read some basic weld symbols, and have a basic understanding of written welding procedures.

10442125 FCAW Techniques (2 cr.)

A study and operation of primarily flux cored arc welding. The student will learn about the different types of electrodes, fluxes and shielding gases used in these processes. Students will be able to weld in all positions, read some basic weld symbols, and have a basic understanding of written welding procedures.

10442126 GTAW Techniques (2 cr.)

A study and operation of primarily gas tungsten arc welding on some mild steel, with the majority of work on stainless steel and aluminum. The student will learn about the different types of electrodes and shielding gases used in these processes. Students will be able to weld in all positions, read some basic weld symbols, and have a basic understanding of written welding procedures.

10442127 Robotic Arc Welding, Basic (2 cr.)

Provides a survey of multiple robot programs, safety and safety systems, learning maintenance, and program editing. Students will work with robot fixtures using the GMAW process.

10442128 Pipe Welding Techniques (2 cr.)

Teaches students how to weld pipe using welding processes including GMAW, FCAW and GTAW. The students will be able to interpret a written welding procedure. Emphasis will be placed on ASME Section 9. Upon completion of this course, the student will be able to weld pipe in all positions.

Course Descriptions

10457131 Manufacturing Enterprises for Fabrication (3 cr.)	Covers the methods and process involved in manufacturing production parts. The course is set up to operate like a production fabrication facility where the student fabricates a product based on customer's specification. Products that are developed must meet customer's quality expectations.
10457141 Advanced Manufacturing Processes (2 cr.)	Covers advanced fabricating methods and processes involved in manufacturing. The course is set up to operate like a production fabrication facility where the student researches, designs, and fabricates a product based on customer's specifications. Products that are developed must meet customer's quality expectations.
10457160 Manufacturing Processes (2 cr.)	Covers punching, drilling, rolling, bending and forming. Sub-assembly parts are produced using various types of equipment. The parts may be joined, by welding, to complete an assembly. Students work in a team environment to complete an assignment. It is recommended that the student have an ACCUPLACER Arithmetic score of 65 or greater or successful completion of equivalent Program Prep course or College Technical Math 1A (10-804-113) or College Technical Math 1 (10-804-115).
10457161 Cutting Processes (2 cr.)	Covers shearing, sawing, laser cutting, abrasive water jet cutting, oxy-fuel cutting, plasma arc cutting and air-carbon arc cutting. Individual parts are produced using computerized and manual equipment. The parts may be joined, by welding, to complete an assembly. Students work in a team environment to complete an assignment.
10457162 Pattern Drafting Processes (2 cr.)	Covers the fundamentals of parallel line, radial line and triangulation. Both hand drawing pattern development with a computer and software pattern development are emphasized. Students transfer drawings to sheet metal and fabricate fittings. Fittings are joined by welding. When enrolling in this course, it is required that the student has taken or is concurrently taking Cutting Processes (10-457-161) and Welding BPR & Symbols (10-621-133).
10621105 Welding/Metal Fab Intro & Safety (1 cr.)	Provides instruction in welding and metal fabrication safety. Students will identify environmental work and personnel hazards common with the industry and proper personal protection methods. Students will also perform common tasks essential to utilization of the welding and metal fabrication lab.
10621108 Weld Print Reading (1 cr.)	Provides practice in reading shop drawings. Topics include orthographic projection, auxiliary views, revolved sections, surface and centerline relationships, isometric drawings, scale drawing and tolerances.
10621113 Robotic Arc Welding, Advanced (2 cr.)	An overview of robots used in industry. Automatic welding principles, including material handling, jigs and fixturing, are evaluated. Students program a robot to weld fixtured parts using the GMAW process.

Course Descriptions

10621114 Weld Symbols (1 cr.)	Teaches students to interpret detailed weld symbols using the American Welding Society standard.
10621115 Welding Processes, Design & Costs (2 cr.)	Studies such processes as plasma, submerged, thermit and electron beam welding. Also emphasizes design concepts and rules of design as well as estimating costs of welding.
10621116 Welding Metallurgy (3 cr.)	Introduces students to basic metallurgy including the location of ore deposits, derivation of metals from their ores, refinement and purification, and admixture and alloying. The classification of ferrous and nonferrous metals and the study of basic metallurgical diagrams is also discussed. Students focus on the behavior of metal during welding and the effects of welding on the properties of metals.
10621117 Weldability of Materials (3 cr.)	Focuses on problems and solutions encountered when welding similar and dissimilar metals. Students will learn to determine the capacity of a metal to be welded and perform satisfactorily under fabrication conditions imposed. Emphasis is on porosity in welds, hydrogen problems, heat treatments in welding, corrosion in stainless steel welds, hot and cold cracking and their solutions.
10621129 2D/3D CAD Modeling for Welders (2 cr.)	Provides instruction and practice in using current computer automated drafting and modeling software. Each student will develop a detailed drawing on the CAD system, complete with weld symbols and a modeled representation of a product design suitable for production.
10621134 Welding NDE, Codes & Testing (3 cr.)	Provides an overview of welding codes and nondestructive examination (NDE). Covers the study of specific welding code and includes cutting, polishing, and testing weldments per code. NDE focuses on Visual Examination, Liquid Penetrant, Magnetic Particle, and Ultrasonic Testing. Instruction includes both theoretical and hands-on NDE methodology.
10621140 Advanced Welding Processes (2 cr.)	Covers the advantages and disadvantages of advanced GMAW and GTAW pulsing and waveforms available with modern welding power sources. Students will use the lab to compare standard welding techniques to advanced pulsing or waveforms. Students will develop welding parameters that meet the required structural, cosmetic and/or mechanical specifications.
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.

Course Descriptions

10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
10804107 College Mathematics (3 cr.)	This course is designed to review and develop fundamental concepts of mathematics in the areas of algebra, geometry, trigonometry, measurement and data. Algebra topics emphasize simplifying algebraic expressions, solving linear equations and inequalities with one variable, solving proportions and percent applications. Geometry and trigonometry topics include; finding areas and volumes of geometric figures, applying similar and congruent triangles, applying Pythagorean Theorem, and solving right triangles using trigonometric ratios. Measurement topics emphasize the application of measurement concepts and conversion techniques within and between U.S. customary and metric system to solve problems. Data topics emphasize data organization and summarization skills, including: frequency distributions, central tendency, relative position and measures of dispersion. Special emphasis is placed on problem solving, critical thinking and logical reasoning, making connections, and using calculators.
10806139 Survey of Physics (3 cr.)	This course emphasizes understanding basic physics concepts through laboratory investigation and applications. Topics include kinematics, dynamics, work, energy, power, temperature, heat, waves, electricity, magnetism, electromagnetic waves, optics, and atomic and nuclear physics.
10809103 Think Critically & Creatively (3 cr.)	Provides instruction about critical and creative thinking that is in high demand in all occupations. Models, theories, and processes provide the foundation for learning logical thinking strategies. Students will apply a systematic approach to problem solving by analyzing the problem, assessing possible solutions, and making effective decisions. In addition, students will generate ideas and analyze complex issues. This course assists students with developing a critical thinking mindset which is essential at every level of personal and professional life.
10809199 Psychology of Human Relations (3 cr.)	Explores the relationship between the general principles of psychology and our everyday lives. Students are given the opportunity to achieve a deepened sense of awareness of themselves and others. This understanding enables students to improve their relationships with others at work, in the family, and in society.

621 - Industrial Welding Welding/Metal Fab Technician

Course Descriptions

10442121 SMAW Techniques 1 (2 cr.)	Covers the process commonly known as stick welding. Upon completion of this course, the student will be able to weld in all positions, read some basic weld symbols, and have a basic understanding of written welding procedures.
10442123 GMAW Techniques 1 (2 cr.)	Demonstrates welding on steel sheet metals and plates. Emphasis is placed on axial spray, pulse spray and short circuit mode of transfer. Upon completion of this course, the student will be able to weld in all positions, read basic weld symbols, and have an understanding of written welding procedures.
10442124 GMAW Techniques 2 (2 cr.)	Teaches students to weld on stainless steel and aluminum sheet metal and plate. The student will be able to differentiate, select proper electrodes, shielding gases, and properly adjust parameters. Emphasis is placed on axial spray, pulse spray and short circuit mode of transfer depending on base metal. Upon completion of this course, the student will be able to weld in all positions, read some basic weld symbols, and have a basic understanding of written welding procedures.
10442125 FCAW Techniques (2 cr.)	A study and operation of primarily flux cored arc welding. The student will learn about the different types of electrodes, fluxes and shielding gases used in these processes. Students will be able to weld in all positions, read some basic weld symbols, and have a basic understanding of written welding procedures.
10442126 GTAW Techniques (2 cr.)	A study and operation of primarily gas tungsten arc welding on some mild steel, with the majority of work on stainless steel and aluminum. The student will learn about the different types of electrodes and shielding gases used in these processes. Students will be able to weld in all positions, read some basic weld symbols, and have a basic understanding of written welding procedures.
10442127 Robotic Arc Welding, Basic (2 cr.)	Provides a survey of multiple robot programs, safety and safety systems, learning maintenance, and program editing. Students will work with robot fixtures using the GMAW process.
10442128 Pipe Welding Techniques (2 cr.)	Teaches students how to weld pipe using welding processes including GMAW, FCAW and GTAW. The students will be able to interpret a written welding procedure. Emphasis will be placed on ASME Section 9. Upon completion of this course, the student will be able to weld pipe in all positions.
10457131 Manufacturing Enterprises for Fabrication (3 cr.)	Covers the methods and process involved in manufacturing production parts. The course is set up to operate like a production fabrication facility where the student fabricates a product based on customer's specification. Products that are developed must meet customer's quality expectations.

Course Descriptions

10457141 Advanced Manufacturing Processes (2 cr.)	Covers advanced fabricating methods and processes involved in manufacturing. The course is set up to operate like a production fabrication facility where the student researches, designs, and fabricates a product based on customer's specifications. Products that are developed must meet customer's quality expectations.
10457160 Manufacturing Processes (2 cr.)	Covers punching, drilling, rolling, bending and forming. Sub-assembly parts are produced using various types of equipment. The parts may be joined, by welding, to complete an assembly. Students work in a team environment to complete an assignment. It is recommended that the student have an ACCUPLACER Arithmetic score of 65 or greater or successful completion of equivalent Program Prep course or College Technical Math 1A (10-804-113) or College Technical Math 1 (10-804-115).
10457161 Cutting Processes (2 cr.)	Covers shearing, sawing, laser cutting, abrasive water jet cutting, oxy-fuel cutting, plasma arc cutting and air-carbon arc cutting. Individual parts are produced using computerized and manual equipment. The parts may be joined, by welding, to complete an assembly. Students work in a team environment to complete an assignment.
10457162 Pattern Drafting Processes (2 cr.)	Covers the fundamentals of parallel line, radial line and triangulation. Both hand drawing pattern development with a computer and software pattern development are emphasized. Students transfer drawings to sheet metal and fabricate fittings. Fittings are joined by welding. When enrolling in this course, it is required that the student has taken or is concurrently taking Cutting Processes (10-457-161) and Welding BPR & Symbols (10-621-133).
10621105 Welding/Metal Fab Intro & Safety (1 cr.)	Provides instruction in welding and metal fabrication safety. Students will identify environmental work and personnel hazards common with the industry and proper personal protection methods. Students will also perform common tasks essential to utilization of the welding and metal fabrication lab.
10621108 Weld Print Reading (1 cr.)	Provides practice in reading shop drawings. Topics include orthographic projection, auxiliary views, revolved sections, surface and centerline relationships, isometric drawings, scale drawing and tolerances.
10621113 Robotic Arc Welding, Advanced (2 cr.)	An overview of robots used in industry. Automatic welding principles, including material handling, jigs and fixturing, are evaluated. Students program a robot to weld fixtured parts using the GMAW process.
10621114 Weld Symbols (1 cr.)	Teaches students to interpret detailed weld symbols using the American Welding Society standard.
10621115 Welding Processes, Design & Costs (2 cr.)	Studies such processes as plasma, submerged, thermit and electron beam welding. Also emphasizes design concepts and rules of design as well as estimating costs of welding.

Course Descriptions

10621116 Welding Metallurgy (3 cr.)	Introduces students to basic metallurgy including the location of ore deposits, derivation of metals from their ores, refinement and purification, and admixture and alloying. The classification of ferrous and nonferrous metals and the study of basic metallurgical diagrams is also discussed. Students focus on the behavior of metal during welding and the effects of welding on the properties of metals.
10621117 Weldability of Materials (3 cr.)	Focuses on problems and solutions encountered when welding similar and dissimilar metals. Students will learn to determine the capacity of a metal to be welded and perform satisfactorily under fabrication conditions imposed. Emphasis is on porosity in welds, hydrogen problems, heat treatments in welding, corrosion in stainless steel welds, hot and cold cracking and their solutions.
10621129 2D/3D CAD Modeling for Welders (2 cr.)	Provides instruction and practice in using current computer automated drafting and modeling software. Each student will develop a detailed drawing on the CAD system, complete with weld symbols and a modeled representation of a product design suitable for production.
10621134 Welding NDE, Codes & Testing (3 cr.)	Provides an overview of welding codes and nondestructive examination (NDE). Covers the study of specific welding code and includes cutting, polishing, and testing weldments per code. NDE focuses on Visual Examination, Liquid Penetrant, Magnetic Particle, and Ultrasonic Testing. Instruction includes both theoretical and hands-on NDE methodology.
10621140 Advanced Welding Processes (2 cr.)	Covers the advantages and disadvantages of advanced GMAW and GTAW pulsing and waveforms available with modern welding power sources. Students will use the lab to compare standard welding techniques to advanced pulsing or waveforms. Students will develop welding parameters that meet the required structural, cosmetic and/or mechanical specifications.

Course Descriptions

10804107 College Mathematics (3 cr.) This course is designed to review and develop fundamental concepts of mathematics in the areas of algebra, geometry, trigonometry, measurement and data. Algebra topics emphasize simplifying algebraic expressions, solving linear equations and inequalities with one variable, solving proportions and percent applications. Geometry and trigonometry topics include; finding areas and volumes of geometric figures, applying similar and congruent triangles, applying Pythagorean Theorem, and solving right triangles using trigonometric ratios. Measurement topics emphasize the application of measurement concepts and conversion techniques within and between U.S. customary and metric system to solve problems. Data topics emphasize data organization and summarization skills, including: frequency distributions, central tendency, relative position and measures of dispersion. Special emphasis is placed on problem solving, critical thinking and logical reasoning, making connections, and using calculators.

10806139 Survey of Physics (3 cr.) This course emphasizes understanding basic physics concepts through laboratory investigation and applications. Topics include kinematics, dynamics, work, energy, power, temperature, heat, waves, electricity, magnetism, electromagnetic waves, optics, and atomic and nuclear physics.

10809103 Think Critically & Creatively (3 cr.) Provides instruction about critical and creative thinking that is in high demand in all occupations. Models, theories, and processes provide the foundation for learning logical thinking strategies. Students will apply a systematic approach to problem solving by analyzing the problem, assessing possible solutions, and making effective decisions. In addition, students will generate ideas and analyze complex issues. This course assists students with developing a critical thinking mindset which is essential at every level of personal and professional life.

623 - Industrial Manufacturing Ariens Quality Technician

10623106 Interpretation of Engineering Drawings (2 cr.) Teaches students how to visualize a three-dimensional part from a drawing, interpret dimensions and tolerances, identify symbols commonly used in engineering drawings, and use engineering drawings for comparison, analysis and problem-solving purposes.

10623115 Quality Audits (3 cr.) Introduces types of and reasons for audits. Students learn how to conduct an internal audit and to describe and apply various auditing tools and techniques such as checklists, interview techniques, record/document review, and tracing.

10623137 Applied Statistical Analysis 1 (3 cr.) Covers the application of statistical methods used to make decisions based on data. Examples include measurement system analysis, control charts, and capability analysis.

Course Descriptions

10623157 Problem Solving Methodologies (3 cr.)

Covers structured problem solving methodologies including Six Sigma, 8D, and PDSA used to identify true root causes and implement effective corrective actions. The application of individual quality tools and techniques to support these methodologies is also covered.

10623173 Metrology, Inspection & Testing (3 cr.)

Offers the student a practical means to plan and use inspection systems and measurement equipment to collect meaningful data to assess and improve the overall approach to meeting customer standards. Students will also develop competence in the care and use of various hand measurement tools as well as the implementation of a calibration program.

10623175 Advanced Inspection Techniques (2 cr.)

Develops in-depth inspection skills utilizing a coordinate measuring machine (CMM) and Geometric Dimensioning and Tolerancing techniques. Also introduces advanced technologies used for inspection and reverse engineering activities.

10623195 Lean Tools (2 cr.)

Introduces useful tools to use when implementing Lean in your organization. Major course topics include team building, lean tools and project management.

623 - Industrial Manufacturing Environmental Health & Safety

10449102 Regulatory Compliance (3 cr.)

Provides the student with an introduction of the federal and state standards that apply to safety and health. The focus will be on how to research and respond to regulatory standards. Using on-line and off-line resources, the student will respond to a series of selected questions about regulatory compliance.

10449134 Environmental Laws & Regulations in Industry (3 cr.)

Provides an overview of regulatory agencies at the local, state and federal levels that apply in an industrial setting. Coursework includes interpreting and applying laws, regulations, inspection programs and potential fines. It also addresses the development of resources to aid in regulatory compliance.

10449162 Fundamentals of Occupational Safety (3 cr.)

Provides the learner with the fundamentals of occupational safety, including the business case for safety, common industrial hazards, hazard control, and common OSHA safety standards.

623 - Industrial Manufacturing Industrial Engineering

10449119 Ergonomics (3 cr.)

Provides the student with an understanding of human engineering. The course will cover the methods to control repetitive motion injuries, office design, and the concept of ease and efficiency for industrial workers. Workstation design in the office and assembly line operations are a part of the class.

Course Descriptions

10623107 IE/ME-Work Measurement (3 cr.)	Helps the learner to develop skills in designing work stations, developing better work methods, establishing work standards, balancing assembly lines, and estimating labor costs. The time study techniques the learner will use include predetermined time standard systems, stopwatch, and work sampling.
10623156 Manufacturing Cost Analysis (3 cr.)	Covers cost estimating and financial analysis techniques employed in typical manufacturing and processing industries. Topics include product material and labor costing, justification of expenditures and capital equipment, make vs. buy analysis, and inventory costs. Also provides an understanding of soft costs and budgeting.
10623179 Industrial Engineering Essentials (3 cr.)	Covers common topics in the Industrial Engineering profession including facilities planning, material handling, process documentation, line balancing, factory capacity and loading techniques, and process control.
10804107 College Mathematics (3 cr.)	This course is designed to review and develop fundamental concepts of mathematics in the areas of algebra, geometry, trigonometry, measurement and data. Algebra topics emphasize simplifying algebraic expressions, solving linear equations and inequalities with one variable, solving proportions and percent applications. Geometry and trigonometry topics include; finding areas and volumes of geometric figures, applying similar and congruent triangles, applying Pythagorean Theorem, and solving right triangles using trigonometric ratios. Measurement topics emphasize the application of measurement concepts and conversion techniques within and between U.S. customary and metric system to solve problems. Data topics emphasize data organization and summarization skills, including: frequency distributions, central tendency, relative position and measures of dispersion. Special emphasis is placed on problem solving, critical thinking and logical reasoning, making connections, and using calculators.

623 - Industrial Manufacturing Industrial Engineering Technology

10449119 Ergonomics (3 cr.)	Provides the student with an understanding of human engineering. The course will cover the methods to control repetitive motion injuries, office design, and the concept of ease and efficiency for industrial workers. Workstation design in the office and assembly line operations are a part of the class.
10623106 Interpretation of Engineering Drawings (2 cr.)	Teaches students how to visualize a three-dimensional part from a drawing, interpret dimensions and tolerances, identify symbols commonly used in engineering drawings, and use engineering drawings for comparison, analysis and problem-solving purposes.

Course Descriptions

10623107 IE/ME-Work Measurement (3 cr.)	Helps the learner to develop skills in designing work stations, developing better work methods, establishing work standards, balancing assembly lines, and estimating labor costs. The time study techniques the learner will use include predetermined time standard systems, stopwatch, and work sampling.
10623132 Project Management (3 cr.)	Offers a systematic approach to coordinating, scheduling, and controlling activities, people, and resources during short-term and long-term projects. Some of the tools presented include Work Breakdown Structures, Activity Diagrams, and Gantt Charts.
10623137 Applied Statistical Analysis 1 (3 cr.)	Covers the application of statistical methods used to make decisions based on data. Examples include measurement system analysis, control charts, and capability analysis.
10623138 Applied Statistical Analysis 2 (3 cr.)	Continues the statistical methods covered in Applied Statistical Analysis 1. Topics include hypothesis testing, regression analysis, and designed experiments.
10623148 Manufacturing Processes (3 cr.)	Presents a comprehensive overview of the fundamental manufacturing process families. Learners focus first on how the processes move from a primary process of operation to the secondary process; then examine the tools and tooling used in manufacturing, forming, and casting techniques and their application, as well as material removal processes.
10623155 Transformational Leadership (3 cr.)	Explores the fundamental truths of good leadership that have stood the test of time. Learners use these fundamentals to develop their leadership skills to see how they can make a difference.
10623156 Manufacturing Cost Analysis (3 cr.)	Covers cost estimating and financial analysis techniques employed in typical manufacturing and processing industries. Topics include product material and labor costing, justification of expenditures and capital equipment, make vs. buy analysis, and inventory costs. Also provides an understanding of soft costs and budgeting.
10623157 Problem Solving Methodologies (3 cr.)	Covers structured problem solving methodologies including Six Sigma, 8D, and PDSA used to identify true root causes and implement effective corrective actions. The application of individual quality tools and techniques to support these methodologies is also covered.
10623165 Project Application (3 cr.)	Satisfies the final requirement of Six Sigma Green Belt certificate. The student shows mastery of the Six Sigma methodology through improvement of an existing process in the workplace.
10623179 Industrial Engineering Essentials (3 cr.)	Covers common topics in the Industrial Engineering profession including facilities planning, material handling, process documentation, line balancing, factory capacity and loading techniques, and process control.

Course Descriptions

- 10623191 Lean Events (3 cr.)** Introduces the culture and outlines the characteristics of an organization that has embraced lean principles. Provides details of planning and facilitating process improvement events, including value stream mapping.
- 10623195 Lean Tools (2 cr.)** Introduces useful tools to use when implementing Lean in your organization. Major course topics include team building, lean tools and project management.
- 10801195 Written Communication (3 cr.)** Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
- 10801196 Oral/Interpersonal Comm (3 cr.)** Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
- 10804107 College Mathematics (3 cr.)** This course is designed to review and develop fundamental concepts of mathematics in the areas of algebra, geometry, trigonometry, measurement and data. Algebra topics emphasize simplifying algebraic expressions, solving linear equations and inequalities with one variable, solving proportions and percent applications. Geometry and trigonometry topics include; finding areas and volumes of geometric figures, applying similar and congruent triangles, applying Pythagorean Theorem, and solving right triangles using trigonometric ratios. Measurement topics emphasize the application of measurement concepts and conversion techniques within and between U.S. customary and metric system to solve problems. Data topics emphasize data organization and summarization skills, including: frequency distributions, central tendency, relative position and measures of dispersion. Special emphasis is placed on problem solving, critical thinking and logical reasoning, making connections, and using calculators.
- 10809195 Economics (3 cr.)** This course is designed to give an overview of microeconomics, macroeconomics, and international economics. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues.

Course Descriptions

10809198 Intro to Psychology (3 cr.) This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.

623 - Industrial Manufacturing Industrial Metrology Technician

50420714 Engineering Drawings for Machine Trade Apprentices (1 cr.) Acquaint the apprentice with the interpretation of engineering prints and other technical and manufacturing documentation. The primary focus of the course will be on that part of manufacturing most closely related to machining and tooling. Background information is provided relative to the process used to create and finish the product or piece part on the prints being studied.

50606701 Introduction to Solid Modeling (1 cr.) Explores fundamentals of computer-aided design (CAD) using SolidWorks software. Provides an application of SolidWorks in creating manufacturing models including solid-part models, assembly models, and engineering drawings.

50606702 GDT for Metrology Apprentices 1 (1 cr.) Provides introductory theory and application to Geometric Dimensioning and Tolerancing according to ASME-14.4M-2007 as well as previous Standards written for 1997 and 1982.

50606703 GDT for Metrology Apprentices 2 (1 cr.) Provides the application of Geometric Dimensioning and Tolerancing according to ASME-14.4M-2007. Apprentices will use SolidWorks to apply GDT to drawings.

50623701 Intro to Manufacturing Processes (1 cr.) Explore common processes used in manufacturing. Emphasis is placed on strategies in standard processes.

50623702 Hand and Bench Tool Inspections (2 cr.) Provides introduction and practice to the hand and bench tools used in inspection. A variety of precision measuring instruments and other tools will be explored including Verier scales, indirect gages, gage blocks, micrometers, indicators, optical comparator, electronic height gauge, and a toolmaker's microscope.

50623703 Production Part Approval Fundamentals (1 cr.) Introduces apprentices to the fundamental components of a production part or first run approval process. Emphasizes dimensional verification & validation and communication of results. Also provides overview of the customer/supplier relationship and the components typically required in a production part approval process.

50623704 Coordinate Measuring Machines 1 (2 cr.) Provides an introduction to a portable CMM (Coordinate Measuring Machine). Apprentices inspect dimensions and tolerances, demonstrate acceptably accuracy, write a measurements routine, employ CAD models, and produce a customized inspection report.

50623705 Process Improvement Tools (2 cr.) Covers structured problem solving methodologies including Six Sigma and 8D used to implement process improvement.

Course Descriptions

50623706 Coordinate Measuring Machines 2 (2 cr.)

Provides a continuation of the advanced inspection techniques using a CMM (Coordinate Measuring Machine). Apprentices write a measurement routine for a bridge CMM, inspect GD&T with a CMM, employ laser scanning techniques, and validate measurements using a second method.

50804504 Industrial Math 1 (1 cr.)

Explore the topics of applied arithmetic and algebra. Study concepts related to measurement, fractions, decimals, percent, ratio and proportion, signed numbers, formula substitution, solutions to equations, tapers and gears. Calculate the areas and volumes of common geometric shapes.

50804505 Industrial Math 2 (1 cr.)

Examine topics in geometry and trigonometry that are related to the metalworking trades. Practice applying geometric theorems and solving both right and oblique triangle problems.

623 - Industrial Manufacturing Lean/Six Sigma Green Belt

10623137 Applied Statistical Analysis 1 (3 cr.)

Covers the application of statistical methods used to make decisions based on data. Examples include measurement system analysis, control charts, and capability analysis.

10623138 Applied Statistical Analysis 2 (3 cr.)

Continues the statistical methods covered in Applied Statistical Analysis 1. Topics include hypothesis testing, regression analysis, and designed experiments.

10623157 Problem Solving Methodologies (3 cr.)

Covers structured problem solving methodologies including Six Sigma, 8D, and PDSA used to identify true root causes and implement effective corrective actions. The application of individual quality tools and techniques to support these methodologies is also covered.

10623165 Project Application (3 cr.)

Satisfies the final requirement of Six Sigma Green Belt certificate. The student shows mastery of the Six Sigma methodology through improvement of an existing process in the workplace.

10623191 Lean Events (3 cr.)

Introduces the culture and outlines the characteristics of an organization that has embraced lean principles. Provides details of planning and facilitating process improvement events, including value stream mapping.

10623195 Lean Tools (2 cr.)

Introduces useful tools to use when implementing Lean in your organization. Major course topics include team building, lean tools and project management.

623 - Industrial Manufacturing Manufacturing Engineering Technology

10449188 Essentials of Manufacturing Safety (1 cr.)

Provides information on the safety responsibilities of workers within the manufacturing industry. Special emphasis will be placed on common hazards and methods of controls.

10606119 Statics and Strength of Materials (3 cr.)

Uses mathematical concepts to determine how forces are distributed through trusses and other rigid structures. Friction and calculation of centroids and moment of inertia are covered. Algebra and other applications of mathematics are used extensively.

Course Descriptions

10606121 Elements of Machine Design (3 cr.)	Examines a variety of problems involving the principles of design. Topics include direct stress, strain, thermal expansion and stress, beam selection, bending moments, torsion, Mohr's circle, combined stress, column buckling, and beam deflection. Algebra and other applications of mathematics are used extensively.
10620111 Pneumatics 1 (1 cr.)	Provides an introduction to fundamental principles and laws of fluid power, with a focus on pneumatics. Laboratory activities are performed to verify the theory.
10620113 Hydraulics 1 (1 cr.)	Provides an introduction to fundamental principles and laws of fluid power, with a focus on hydraulics. Laboratory activities are performed to verify the theory.
10620164 Elements of Machines 1 (1 cr.)	Emphasizes the mechanical elements of industrial machines. Principles of leveling motors, fasteners, bearings, and couplings are covered. Terminology, selection, and proper installation and maintenance are stressed.
10620165 Elements of Machines 2 (1 cr.)	Emphasizes the mechanical elements of industrial machines. Principles of power transmission, belt drives, and chain drives are covered. Terminology, selection, and proper installation and maintenance are stressed.
10623120 Computer-Aided Manufacturing (4 cr.)	Provides students with the opportunity to design, program, and produce manufactured parts using computer-aided design and manufacturing software and computer numerically controlled (CNC) machines. Also explores additional computer applications in manufacturing.
10623121 Engineering Materials (3 cr.)	Discusses the relationship between the properties and processes of various materials, including metals, ceramics, polymers, and composites. Emphasis is on the fundamentals of selecting materials based on engineering design criteria.
10623131 Tool Design (3 cr.)	Introduces the fixtures, jigs, and tooling commonly used in manufacturing. Topics include workholding concepts, jig & fixture design, inspection gage design, tool materials, modular & automated tooling systems, geometric dimensioning & tolerancing, and die design. Students will use 3D CAD software to produce a variety of designs.
10623132 Project Management (3 cr.)	Offers a systematic approach to coordinating, scheduling, and controlling activities, people, and resources during short-term and long-term projects. Some of the tools presented include Work Breakdown Structures, Activity Diagrams, and Gantt Charts.
10623156 Manufacturing Cost Analysis (3 cr.)	Covers cost estimating and financial analysis techniques employed in typical manufacturing and processing industries. Topics include product material and labor costing, justification of expenditures and capital equipment, make vs. buy analysis, and inventory costs. Also provides an understanding of soft costs and budgeting.

Course Descriptions

10623168 Electrical Concepts & Components (2 cr.)	Covers basic electrical theory and terminology related to components commonly found in manufacturing systems. Students will understand the power requirements of equipment and the use of a multimeter and oscilloscope for basic troubleshooting of circuits.
10623190 Lean Process Design (3 cr.)	Introduces lean principles for manufacturing and assembly process design. Topics include time and motion studies, line balancing, ergonomics, work instructions, workstation design, mistake-proofing, changeover reduction, and risk analysis.
10623192 Graphics & Software Applications (4 cr.)	Students will learn engineering print reading, the use of 2D and 3D CAD software, and the use of spreadsheet software to organize, analyze, and display data. Additional topics include product data management and enterprise resource planning systems.
10623193 Automation for MfgET (3 cr.)	Introduces programmable logic controllers and industrial robotics. Students will learn programming basics with an emphasis on troubleshooting and maintenance after the installation of automated systems.
10623195 Lean Tools (2 cr.)	Introduces useful tools to use when implementing Lean in your organization. Major course topics include team building, lean tools and project management.
10623199 Manufacturing Processes for MfgET (3 cr.)	Covers the manufacturing systems and processes employed to convert materials into products. Includes process planning and related manufacturing engineering functions. Incorporates hands-on experience with manufacturing processes and basic metrology.
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
10804197 College Algebra and Trigonometry with Applications (5 cr.)	This course covers skills needed for success in Calculus and many application areas at the baccalaureate level. Algebra topics include the real and complex number systems, polynomials, exponents, radicals, solving equations and inequalities, relations and functions, systems of equations and inequalities, graphing, and conic sections. Trigonometry topics include the unit circle, trigonometric functions, graphs, identities, equations, inverse functions, solutions of triangles, complex numbers, polar coordinates, and vectors.

Course Descriptions

10809195 Economics (3 cr.)	This course is designed to give an overview of microeconomics, macroeconomics, and international economics. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues.
10809198 Intro to Psychology (3 cr.)	This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.
623 - Industrial Manufacturing Process Technician	
10623106 Interpretation of Engineering Drawings (2 cr.)	Teaches students how to visualize a three-dimensional part from a drawing, interpret dimensions and tolerances, identify symbols commonly used in engineering drawings, and use engineering drawings for comparison, analysis and problem-solving purposes.
10623107 IE/ME-Work Measurement (3 cr.)	Helps the learner to develop skills in designing work stations, developing better work methods, establishing work standards, balancing assembly lines, and estimating labor costs. The time study techniques the learner will use include predetermined time standard systems, stopwatch, and work sampling.
10623148 Manufacturing Processes (3 cr.)	Presents a comprehensive overview of the fundamental manufacturing process families. Learners focus first on how the processes move from a primary process of operation to the secondary process; then examine the tools and tooling used in manufacturing, forming, and casting techniques and their application, as well as material removal processes.
10623179 Industrial Engineering Essentials (3 cr.)	Covers common topics in the Industrial Engineering profession including facilities planning, material handling, process documentation, line balancing, factory capacity and loading techniques, and process control.
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.

Course Descriptions

10804107 College Mathematics (3 cr.) This course is designed to review and develop fundamental concepts of mathematics in the areas of algebra, geometry, trigonometry, measurement and data. Algebra topics emphasize simplifying algebraic expressions, solving linear equations and inequalities with one variable, solving proportions and percent applications. Geometry and trigonometry topics include; finding areas and volumes of geometric figures, applying similar and congruent triangles, applying Pythagorean Theorem, and solving right triangles using trigonometric ratios. Measurement topics emphasize the application of measurement concepts and conversion techniques within and between U.S. customary and metric system to solve problems. Data topics emphasize data organization and summarization skills, including: frequency distributions, central tendency, relative position and measures of dispersion. Special emphasis is placed on problem solving, critical thinking and logical reasoning, making connections, and using calculators.

623 - Industrial Manufacturing Production Inspection & Metrology

10623173 Metrology, Inspection & Testing (3 cr.) Offers the student a practical means to plan and use inspection systems and measurement equipment to collect meaningful data to assess and improve the overall approach to meeting customer standards. Students will also develop competence in the care and use of various hand measurement tools as well as the implementation of a calibration program.

10623175 Advanced Inspection Techniques (2 cr.) Develops in-depth inspection skills utilizing a coordinate measuring machine (CMM) and Geometric Dimensioning and Tolerancing techniques. Also introduces advanced technologies used for inspection and reverse engineering activities.

623 - Industrial Manufacturing Quality (Non-Manufacturing)

10506101 Beginning Laboratory Science (3 cr.) Introduces the learner to beginning laboratory concepts and procedures. Emphasis will be on general laboratory safety, basic laboratory equipment utilization and calibration techniques. An introduction to scientific inquiry will be addressed. Proper techniques in documentation as it relates to quality control in verification of a quality system will be introduced. Concepts in data analysis will be reviewed as it relates to creation of a laboratory notebook.

10506113 Instrumentation (2 cr.) Focuses on the principles, use and care of laboratory instruments. Students will learn how various instruments are used to measure physical and chemical properties, and they will be introduced to calibration, maintenance and troubleshooting for various types of laboratory instruments.

Course Descriptions

10623115 Quality Audits (3 cr.)	Introduces types of and reasons for audits. Students learn how to conduct an internal audit and to describe and apply various auditing tools and techniques such as checklists, interview techniques, record/document review, and tracing.
10623137 Applied Statistical Analysis 1 (3 cr.)	Covers the application of statistical methods used to make decisions based on data. Examples include measurement system analysis, control charts, and capability analysis.
10623157 Problem Solving Methodologies (3 cr.)	Covers structured problem solving methodologies including Six Sigma, 8D, and PDSA used to identify true root causes and implement effective corrective actions. The application of individual quality tools and techniques to support these methodologies is also covered.

623 - Industrial Manufacturing Quality Engineering Technology

10623106 Interpretation of Engineering Drawings (2 cr.)	Teaches students how to visualize a three-dimensional part from a drawing, interpret dimensions and tolerances, identify symbols commonly used in engineering drawings, and use engineering drawings for comparison, analysis and problem-solving purposes.
10623115 Quality Audits (3 cr.)	Introduces types of and reasons for audits. Students learn how to conduct an internal audit and to describe and apply various auditing tools and techniques such as checklists, interview techniques, record/document review, and tracing.
10623132 Project Management (3 cr.)	Offers a systematic approach to coordinating, scheduling, and controlling activities, people, and resources during short-term and long-term projects. Some of the tools presented include Work Breakdown Structures, Activity Diagrams, and Gantt Charts.
10623137 Applied Statistical Analysis 1 (3 cr.)	Covers the application of statistical methods used to make decisions based on data. Examples include measurement system analysis, control charts, and capability analysis.
10623138 Applied Statistical Analysis 2 (3 cr.)	Continues the statistical methods covered in Applied Statistical Analysis 1. Topics include hypothesis testing, regression analysis, and designed experiments.
10623148 Manufacturing Processes (3 cr.)	Presents a comprehensive overview of the fundamental manufacturing process families. Learners focus first on how the processes move from a primary process of operation to the secondary process; then examine the tools and tooling used in manufacturing, forming, and casting techniques and their application, as well as material removal processes.
10623155 Transformational Leadership (3 cr.)	Explores the fundamental truths of good leadership that have stood the test of time. Learners use these fundamentals to develop their leadership skills to see how they can make a difference.

Course Descriptions

10623157 Problem Solving Methodologies (3 cr.)	Covers structured problem solving methodologies including Six Sigma, 8D, and PDSA used to identify true root causes and implement effective corrective actions. The application of individual quality tools and techniques to support these methodologies is also covered.
10623165 Project Application (3 cr.)	Satisfies the final requirement of Six Sigma Green Belt certificate. The student shows mastery of the Six Sigma methodology through improvement of an existing process in the workplace.
10623166 Supplier Mgmt. & Performance Monitoring (3 cr.)	Covers quality expectations between customer and supplier. Topics include product specifications, performance metrics, supplier assessment and approval, quality planning, and corrective action.
10623173 Metrology, Inspection & Testing (3 cr.)	Offers the student a practical means to plan and use inspection systems and measurement equipment to collect meaningful data to assess and improve the overall approach to meeting customer standards. Students will also develop competence in the care and use of various hand measurement tools as well as the implementation of a calibration program.
10623175 Advanced Inspection Techniques (2 cr.)	Develops in-depth inspection skills utilizing a coordinate measuring machine (CMM) and Geometric Dimensioning and Tolerancing techniques. Also introduces advanced technologies used for inspection and reverse engineering activities.
10623191 Lean Events (3 cr.)	Introduces the culture and outlines the characteristics of an organization that has embraced lean principles. Provides details of planning and facilitating process improvement events, including value stream mapping.
10623195 Lean Tools (2 cr.)	Introduces useful tools to use when implementing Lean in your organization. Major course topics include team building, lean tools and project management.
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.

Course Descriptions

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10809198 Intro to Psychology (3 cr.) This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.

623 - Industrial Manufacturing Quality Technician

10623106 Interpretation of Engineering Drawings (2 cr.) Teaches students how to visualize a three-dimensional part from a drawing, interpret dimensions and tolerances, identify symbols commonly used in engineering drawings, and use engineering drawings for comparison, analysis and problem-solving purposes.

10623115 Quality Audits (3 cr.) Introduces types of and reasons for audits. Students learn how to conduct an internal audit and to describe and apply various auditing tools and techniques such as checklists, interview techniques, record/document review, and tracing.

10623148 Manufacturing Processes (3 cr.) Presents a comprehensive overview of the fundamental manufacturing process families. Learners focus first on how the processes move from a primary process of operation to the secondary process; then examine the tools and tooling used in manufacturing, forming, and casting techniques and their application, as well as material removal processes.

Course Descriptions

10623157 Problem Solving Methodologies (3 cr.)	Covers structured problem solving methodologies including Six Sigma, 8D, and PDSA used to identify true root causes and implement effective corrective actions. The application of individual quality tools and techniques to support these methodologies is also covered.
10623173 Metrology, Inspection & Testing (3 cr.)	Offers the student a practical means to plan and use inspection systems and measurement equipment to collect meaningful data to assess and improve the overall approach to meeting customer standards. Students will also develop competence in the care and use of various hand measurement tools as well as the implementation of a calibration program.
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
10804107 College Mathematics (3 cr.)	This course is designed to review and develop fundamental concepts of mathematics in the areas of algebra, geometry, trigonometry, measurement and data. Algebra topics emphasize simplifying algebraic expressions, solving linear equations and inequalities with one variable, solving proportions and percent applications. Geometry and trigonometry topics include; finding areas and volumes of geometric figures, applying similar and congruent triangles, applying Pythagorean Theorem, and solving right triangles using trigonometric ratios. Measurement topics emphasize the application of measurement concepts and conversion techniques within and between U.S. customary and metric system to solve problems. Data topics emphasize data organization and summarization skills, including: frequency distributions, central tendency, relative position and measures of dispersion. Special emphasis is placed on problem solving, critical thinking and logical reasoning, making connections, and using calculators.
623 - Industrial Manufacturing Quality, Manufacturing Certificate	
10623115 Quality Audits (3 cr.)	Introduces types of and reasons for audits. Students learn how to conduct an internal audit and to describe and apply various auditing tools and techniques such as checklists, interview techniques, record/document review, and tracing.
10623137 Applied Statistical Analysis 1 (3 cr.)	Covers the application of statistical methods used to make decisions based on data. Examples include measurement system analysis, control charts, and capability analysis.

Course Descriptions

10623157 Problem Solving Methodologies (3 cr.)

Covers structured problem solving methodologies including Six Sigma, 8D, and PDSA used to identify true root causes and implement effective corrective actions. The application of individual quality tools and techniques to support these methodologies is also covered.

10623173 Metrology, Inspection & Testing (3 cr.)

Offers the student a practical means to plan and use inspection systems and measurement equipment to collect meaningful data to assess and improve the overall approach to meeting customer standards. Students will also develop competence in the care and use of various hand measurement tools as well as the implementation of a calibration program.

10623175 Advanced Inspection Techniques (2 cr.)

Develops in-depth inspection skills utilizing a coordinate measuring machine (CMM) and Geometric Dimensioning and Tolerancing techniques. Also introduces advanced technologies used for inspection and reverse engineering activities.

628 - Automated Advanced Automation and Maintenance

10449188 Essentials of Manufacturing Safety (1 cr.)

Provides information on the safety responsibilities of workers within the manufacturing industry. Special emphasis will be placed on common hazards and methods of controls.

10628101 Concepts of Programming for Technicians (1 cr.)

Introduces students to programming fundamentals necessary in automation related careers. Students will discuss proper programming structures including flow chart and pseudocode programming. Students will create and troubleshoot programs.

10628113 Electronic Construction Applications (1 cr.)

Introduces industrial control panel design, layout, mounting, and wiring of industrial relays, push buttons, pilot lights, plc, fuses, transformers, 3 phase motor, and motor starters are applied. Quality installation and NEC standards are emphasized throughout the course.

10628151 PLC 1 (1 cr.)

Introduces Programmable Logic Controllers (PLC)s and RSLogix 500 Programming Software. The PLC hardware will consist of Allen Bradley products. Students use the RSLogix 500 programming software to create logical solutions for real world applications. The applications will require students to create, download, and debug programs in RSLogix 500.

10628152 PLC 2 (1 cr.)

Introduces Programmable Logic Controllers (PLC)s and Studio 5000 (formerly RSLogix5000) Programming Software. The PLC hardware will consist of Allen Bradley products. Students will configure Ethernet communications to connect to the Allen Bradley PLC hardware. Students will use Studio 5000 programming software to create logical solutions for real world applications. The applications will require students to create, download, and debug their programs. Students will study industrial sensors and their uses. Students will wire and test sensor operations.

Course Descriptions

10628153 PLC 3 (1 cr.)	Continues using the Allen Bradley PLC hardware platform with Studio 5000 programming software. Introduces Analog I/O and scaling for program interfacing. Scaling with math instructions, data handling with FIFO/LIFO instructions, and sequencer SQI/SQO instructions are all introduced.
10628154 PLC 4 (1 cr.)	Introduces the IEC 61131-3 compatible languages within Studio 5000. Students are introduced to Structured Text (ST), Sequential Function Charts (SFC), and Function Block Diagrams (FBD). Additionally, students learn remote I/O.
10628155 PLC 5 (1 cr.)	Introduces motion programming within Studio 5000. Students will configure, tune, program, and troubleshoot a complete motion control system. The course will cover homing, moving, jogging, and coordinated axis instructions of a motion device. The course introduces advanced PLC to PLC communication, advanced data types, and using Add-On instructions.
10628161 Robotics 1 (1 cr.)	Introduces basic robotic programming techniques. Hands on experience will include safety, system setup, jogging, events, tools, coordinate systems, and robot movement types.
10628162 Robotics 2 (1 cr.)	Introduces advanced programming techniques. Hands on experience will include robotic input and output routines, program flow, variables/math instructions, offsets instructions, and operator communication instructions.
10628176 Enterprise Integration 1 (1 cr.)	Introduces students to PC based Human Machine Interface (HMI) development. The course uses Wonderware as a platform to design and develop the various components in most HMIs. Components include Basic Objects, Animations, Scripting, Alarms, Trending, and Security.
10628177 Enterprise Integration 2 (1 cr.)	Introduces students to PC based Human Machine Interface (HMI) development. The course uses FactoryTalk Site Edition (SE) as a platform to design and develop the various components in most HMIs. Components include Basic Objects, Animations, Macros, Global Objects, Recipes, Local Messages, Alarms, Trending, and Security.
10628194 Cell Integration (4 cr.)	Covers automated manufacturing cell design and creation. Applies programmable logic controllers, robotics, sensors, motion controls, drives, vision systems, and industrial safety hardware. Students create electrical schematics, wire, program, and troubleshoot an automated manufacturing cell.
10660110 DC Circuits 1 (1 cr.)	Introduces electrical safety and program procedures. The course covers Ohm's Law, power law, series circuits, and voltmeter, ammeter and ohmmeter applications. Number powers, electronic notations, circuit component recognition and diagrams, resistor power ratings, color code, Kirchhoff's voltage law and atomic structure are also included.

Course Descriptions

10660111 DC Circuits 2 (1 cr.)	Covers basic parallel and series-parallel circuits and their properties. Examines the theory, application and design of series-parallel circuits, such as loaded and unloaded voltage dividers and the Wheatstone bridge. Laboratory activities are performed to verify the theory.
10660112 DC Circuits 3 (1 cr.)	Covers capacitors and inductors including time constants and instantaneous voltage and current values of RC and RL circuits. Applications and various types of capacitors and inductors are discussed. Magnetism, electromagnetism, and devices, such as relays and solenoids, are also presented. Laboratory activities are performed to verify the theory.
10660114 AC Circuits 1 (1 cr.)	Covers AC waveforms and different voltage values including Peak, RMS, Average and Peak to Peak. The operation of transformers is also included. Laboratory activities using the oscilloscope are performed to verify the theory.
10660170 Ladder Logic & Control Devices (1 cr.)	Introduces hardwired components found in industrial applications used to control simple circuits. Students will learn about switches, relays, contactors, timers, and indicator lamps. Students will use their knowledge of these devices to wire various circuits. Students will use ladder logic diagrams to interconnect and label devices to make complete circuits.
10804113 College Technical Math 1A (3 cr.)	Topics include: solving linear equations; graphing; percent; proportions; measurement systems; computational geometry; and right triangle trigonometry. Emphasis will be on the application of skills to technical problems. Successful completion of College Technical Mathematics 1A and College Technical Mathematics 1B is the equivalent of College Technical Mathematics 1.

628 - Automated Manufacturing Systems Technology

10449188 Essentials of Manufacturing Safety (1 cr.)	Provides information on the safety responsibilities of workers within the manufacturing industry. Special emphasis will be placed on common hazards and methods of controls.
10620111 Pneumatics 1 (1 cr.)	Provides an introduction to fundamental principles and laws of fluid power, with a focus on pneumatics. Laboratory activities are performed to verify the theory.
10620112 Pneumatics 2 (1 cr.)	Introduces advanced pneumatic and electropneumatic systems. Students examine how pneumatic components operate and how they interact in industrial systems. Laboratory activities are performed to verify the theory.
10620132 Industrial Electrical Applications (1 cr.)	Introduces the National Electrical Code as it applies to safe installation of electrical wiring and equipment. This includes motor design, wiring methods, and fusing of automated systems.

Course Descriptions

10620142 Motors and Drives 2 (1 cr.)	Introduces AC Generators, Three Phase, and Single Phase motors. Starting methods for AC motors, including AC Drives, will be introduced. Control wiring and reversing circuits will also be introduced. Students will wire for Synchronous and Induction motor operation.
10620148 Motors and Drives 1 (1 cr.)	Introduces DC motors and generators, along with DC Drives. Students will wire both separately-excited and self-excited DC generators. Counter Electromotive Force (CEMF) will be used to explain the operational principles of DC motors and generators. Various DC motor types will be introduced. Motor types include series, shunt, and compound motors.
10620164 Elements of Machines 1 (1 cr.)	Emphasizes the mechanical elements of industrial machines. Principles of leveling motors, fasteners, bearings, and couplings are covered. Terminology, selection, and proper installation and maintenance are stressed.
10620165 Elements of Machines 2 (1 cr.)	Emphasizes the mechanical elements of industrial machines. Principles of power transmission, belt drives, and chain drives are covered. Terminology, selection, and proper installation and maintenance are stressed.
10620188 System Troubleshooting (1 cr.)	Develops troubleshooting skills by using several closed-loop systems on a level and flow process trainer. Students identify faults electrically inserted into this trainer by recognizing symptoms, creating and using flow charts for analysis, and finding the problem with test instruments.
10628101 Concepts of Programming for Technicians (1 cr.)	Introduces students to programming fundamentals necessary in automation related careers. Students will discuss proper programming structures including flow chart and pseudocode programming. Students will create and troubleshoot programs.
10628113 Electronic Construction Applications (1 cr.)	Introduces industrial control panel design, layout, mounting, and wiring of industrial relays, push buttons, pilot lights, plc, fuses, transformers, 3 phase motor, and motor starters are applied. Quality installation and NEC standards are emphasized throughout the course.
10628151 PLC 1 (1 cr.)	Introduces Programmable Logic Controllers (PLC)s and RSLogix 500 Programming Software. The PLC hardware will consist of Allen Bradley products. Students use the RSLogix 500 programming software to create logical solutions for real world applications. The applications will require students to create, download, and debug programs in RSLogix 500.

Course Descriptions

10628152 PLC 2 (1 cr.)	Introduces Programmable Logic Controllers (PLC)s and Studio 5000 (formerly RSLogix5000) Programming Software. The PLC hardware will consist of Allen Bradley products. Students will configure Ethernet communications to connect to the Allen Bradley PLC hardware. Students will use Studio 5000 programming software to create logical solutions for real world applications. The applications will require students to create, download, and debug their programs. Students will study industrial sensors and their uses. Students will wire and test sensor operations.
10628153 PLC 3 (1 cr.)	Continues using the Allen Bradley PLC hardware platform with Studio 5000 programming software. Introduces Analog I/O and scaling for program interfacing. Scaling with math instructions, data handling with FIFO/LIFO instructions, and sequencer SQI/SQO instructions are all introduced.
10628154 PLC 4 (1 cr.)	Introduces the IEC 61131-3 compatible languages within Studio 5000. Students are introduced to Structured Text (ST), Sequential Function Charts (SFC), and Function Block Diagrams (FBD). Additionally, students learn remote I/O.
10628155 PLC 5 (1 cr.)	Introduces motion programming within Studio 5000. Students will configure, tune, program, and troubleshoot a complete motion control system. The course will cover homing, moving, jogging, and coordinated axis instructions of a motion device. The course introduces advanced PLC to PLC communication, advanced data types, and using Add-On instructions.
10628159 Operator Interfaces (1 cr.)	Introduces Human Machine Interface (HMI) development. Students create Displays, HMI tags, Basic Objects, Object Animations, Global Objects, Alarms, and Trending.
10628161 Robotics 1 (1 cr.)	Introduces basic robotic programming techniques. Hands on experience will include safety, system setup, jogging, events, tools, coordinate systems, and robot movement types.
10628162 Robotics 2 (1 cr.)	Introduces advanced programming techniques. Hands on experience will include robotic input and output routines, program flow, variables/math instructions, offsets instructions, and operator communication instructions.
10628163 Robotics Integration (1 cr.)	Introduces robotic vision systems and PC based robotic programming software. Students will network robots with Programmable Logic Controllers as an introduction to an automated manufacturing cell.
10628171 Instrumentation & Process Control 1 (1 cr.)	Introduces Open Loop and Closed Loop control. Students learn about On/Off control, effects of deadband, and common manufacturing processes, which include Batch Processes and Continuous Processes.
10628172 Instrumentation & Process Control 2 (1 cr.)	Introduces Proportional Control using Proportional Band and Proportional Gain. Students apply calibration procedures to correct transmitter output signals, and interpret Piping and Instrumentation Diagrams.

Course Descriptions

- 10628173 Instrumentation & Process Control 3 (1 cr.)** Introduces Programmable Logic Controller (PLC) based Proportional Integral and Derivative (PID) Control. Students apply various tuning methods to control closed-loop processes, including flow, level and temperature.
- 10628176 Enterprise Integration 1 (1 cr.)** Introduces students to PC based Human Machine Interface (HMI) development. The course uses Wonderware as a platform to design and develop the various components in most HMIs. Components include Basic Objects, Animations, Scripting, Alarms, Trending, and Security.
- 10628177 Enterprise Integration 2 (1 cr.)** Introduces students to PC based Human Machine Interface (HMI) development. The course uses FactoryTalk Site Edition (SE) as a platform to design and develop the various components in most HMIs. Components include Basic Objects, Animations, Macros, Global Objects, Recipes, Local Messages, Alarms, Trending, and Security.
- 10628181 Visual Basic Programming 1 (1 cr.)** Introduces students to computer programming using the Microsoft Visual Basic software. Students will design, construct, and debug VB programs and applications.
- 10628182 Visual Basic Programming 2 (1 cr.)** Introduces students to advanced computer programming using Microsoft Visual Basic software. Students will design, construct, and debug VB program and applications.
- 10628187 AutoCAD Fundamentals (1 cr.)** Teaches students to draw, edit, dimension, and plot drawings with the AutoCAD software.
- 10628188 Blueprint Reading & AutoCAD (1 cr.)** Introduces students to reading both electrical schematics and mechanical prints, while utilizing the AutoCAD software.
- 10628194 Cell Integration (4 cr.)** Covers automated manufacturing cell design and creation. Applies programmable logic controllers, robotics, sensors, motion controls, drives, vision systems, and industrial safety hardware. Students create electrical schematics, wire, program, and troubleshoot an automated manufacturing cell.
- 10660110 DC Circuits 1 (1 cr.)** Introduces electrical safety and program procedures. The course covers Ohm's Law, power law, series circuits, and voltmeter, ammeter and ohmmeter applications. Number powers, electronic notations, circuit component recognition and diagrams, resistor power ratings, color code, Kirchhoff's voltage law and atomic structure are also included.
- 10660111 DC Circuits 2 (1 cr.)** Covers basic parallel and series-parallel circuits and their properties. Examines the theory, application and design of series-parallel circuits, such as loaded and unloaded voltage dividers and the Wheatstone bridge. Laboratory activities are performed to verify the theory.
- 10660112 DC Circuits 3 (1 cr.)** Covers capacitors and inductors including time constants and instantaneous voltage and current values of RC and RL circuits. Applications and various types of capacitors and inductors are discussed. Magnetism, electromagnetism, and devices, such as relays and solenoids, are also presented. Laboratory activities are performed to verify the theory.

Course Descriptions

10660114 AC Circuits 1 (1 cr.)	Covers AC waveforms and different voltage values including Peak, RMS, Average and Peak to Peak. The operation of transformers is also included. Laboratory activities using the oscilloscope are performed to verify the theory.
10660170 Ladder Logic & Control Devices (1 cr.)	Introduces hardwired components found in industrial applications used to control simple circuits. Students will learn about switches, relays, contactors, timers, and indicator lamps. Students will use their knowledge of these devices to wire various circuits. Students will use ladder logic diagrams to interconnect and label devices to make complete circuits.
10660181 Technical Software Essentials (1 cr.)	Introduces students to the Microsoft Office family of products. Students will create and edit Word documents, Excel spreadsheets, and Access databases.
10660184 Computer Systems & Networks 1 (1 cr.)	Focuses on computer terms, computer hardware, computer functions, security and operating systems. Basic networking concepts are also introduced.
10660185 Computer Systems & Networks 2 (1 cr.)	Introduces unique industrial networking media types. Ethernet networks including switches, routers, protocols, security, remote access, and wireless technology in an industrial setting.
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
10804113 College Technical Math 1A (3 cr.)	Topics include: solving linear equations; graphing; percent; proportions; measurement systems; computational geometry; and right triangle trigonometry. Emphasis will be on the application of skills to technical problems. Successful completion of College Technical Mathematics 1A and College Technical Mathematics 1B is the equivalent of College Technical Mathematics 1.
10804133 Math & Logic (3 cr.)	Students will apply problem solving techniques from discrete mathematics. Topics include symbolic logic, sets, algebra and base number systems.

Course Descriptions

10809195 Economics (3 cr.)

This course is designed to give an overview of microeconomics, macroeconomics, and international economics. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues.

10809199 Psychology of Human Relations (3 cr.)

Explores the relationship between the general principles of psychology and our everyday lives. Students are given the opportunity to achieve a deepened sense of awareness of themselves and others. This understanding enables students to improve their relationships with others at work, in the family, and in society.

628 - Automated Computer Applications in Automation

10628187 AutoCAD Fundamentals (1 cr.) Teaches students to draw, edit, dimension, and plot drawings with the AutoCAD software.

10628188 Blueprint Reading & AutoCAD (1 cr.) Introduces students to reading both electrical schematics and mechanical prints, while utilizing the AutoCAD software.

10660181 Technical Software Essentials (1 cr.) Introduces students to the Microsoft Office family of products. Students will create and edit Word documents, Excel spreadsheets, and Access databases.

628 - Automated Computer Programming in Automation

10628101 Concepts of Programming for Technicians (1 cr.) Introduces students to programming fundamentals necessary in automation related careers. Students will discuss proper programming structures including flow chart and pseudocode programming. Students will create and troubleshoot programs.

10628181 Visual Basic Programming 1 (1 cr.) Introduces students to computer programming using the Microsoft Visual Basic software. Students will design, construct, and debug VB programs and applications.

10628182 Visual Basic Programming 2 (1 cr.) Introduces students to advanced computer programming using Microsoft Visual Basic software. Students will design, construct, and debug VB program and applications.

628 - Automated Controls Maintenance

10620188 System Troubleshooting (1 cr.) Develops troubleshooting skills by using several closed-loop systems on a level and flow process trainer. Students identify faults electrically inserted into this trainer by recognizing symptoms, creating and using flow charts for analysis, and finding the problem with test instruments.

10628101 Concepts of Programming for Technicians (1 cr.) Introduces students to programming fundamentals necessary in automation related careers. Students will discuss proper programming structures including flow chart and pseudocode programming. Students will create and troubleshoot programs.

Course Descriptions

10628151 PLC 1 (1 cr.)	Introduces Programmable Logic Controllers (PLC)s and RSLogix 500 Programming Software. The PLC hardware will consist of Allen Bradley products. Students use the RSLogix 500 programming software to create logical solutions for real world applications. The applications will require students to create, download, and debug programs in RSLogix 500.
10628152 PLC 2 (1 cr.)	Introduces Programmable Logic Controllers (PLC)s and Studio 5000 (formerly RSLogix5000) Programming Software. The PLC hardware will consist of Allen Bradley products. Students will configure Ethernet communications to connect to the Allen Bradley PLC hardware. Students will use Studio 5000 programming software to create logical solutions for real world applications. The applications will require students to create, download, and debug their programs. Students will study industrial sensors and their uses. Students will wire and test sensor operations.
10628153 PLC 3 (1 cr.)	Continues using the Allen Bradley PLC hardware platform with Studio 5000 programming software. Introduces Analog I/O and scaling for program interfacing. Scaling with math instructions, data handling with FIFO/LIFO instructions, and sequencer SQI/SQO instructions are all introduced.
10628159 Operator Interfaces (1 cr.)	Introduces Human Machine Interface (HMI) development. Students create Displays, HMI tags, Basic Objects, Object Animations, Global Objects, Alarms, and Trending.
10660110 DC Circuits 1 (1 cr.)	Introduces electrical safety and program procedures. The course covers Ohm's Law, power law, series circuits, and voltmeter, ammeter and ohmmeter applications. Number powers, electronic notations, circuit component recognition and diagrams, resistor power ratings, color code, Kirchhoff's voltage law and atomic structure are also included.
10660111 DC Circuits 2 (1 cr.)	Covers basic parallel and series-parallel circuits and their properties. Examines the theory, application and design of series-parallel circuits, such as loaded and unloaded voltage dividers and the Wheatstone bridge. Laboratory activities are performed to verify the theory.
10660112 DC Circuits 3 (1 cr.)	Covers capacitors and inductors including time constants and instantaneous voltage and current values of RC and RL circuits. Applications and various types of capacitors and inductors are discussed. Magnetism, electromagnetism, and devices, such as relays and solenoids, are also presented. Laboratory activities are performed to verify the theory.
10660114 AC Circuits 1 (1 cr.)	Covers AC waveforms and different voltage values including Peak, RMS, Average and Peak to Peak. The operation of transformers is also included. Laboratory activities using the oscilloscope are performed to verify the theory.

Course Descriptions

10660170 Ladder Logic & Control Devices (1 cr.)

Introduces hardwired components found in industrial applications used to control simple circuits. Students will learn about switches, relays, contactors, timers, and indicator lamps. Students will use their knowledge of these devices to wire various circuits. Students will use ladder logic diagrams to interconnect and label devices to make complete circuits.

10804113 College Technical Math 1A (3 cr.)

Topics include: solving linear equations; graphing; percent; proportions; measurement systems; computational geometry; and right triangle trigonometry. Emphasis will be on the application of skills to technical problems. Successful completion of College Technical Mathematics 1A and College Technical Mathematics 1B is the equivalent of College Technical Mathematics 1.

628 - Automated Electrical Maintenance

10449188 Essentials of Manufacturing Safety (1 cr.)

Provides information on the safety responsibilities of workers within the manufacturing industry. Special emphasis will be placed on common hazards and methods of controls.

10620132 Industrial Electrical Applications (1 cr.)

Introduces the National Electrical Code as it applies to safe installation of electrical wiring and equipment. This includes motor design, wiring methods, and fusing of automated systems.

10620188 System Troubleshooting (1 cr.)

Develops troubleshooting skills by using several closed-loop systems on a level and flow process trainer. Students identify faults electrically inserted into this trainer by recognizing symptoms, creating and using flow charts for analysis, and finding the problem with test instruments.

10628113 Electronic Construction Applications (1 cr.)

Introduces industrial control panel design, layout, mounting, and wiring of industrial relays, push buttons, pilot lights, plc, fuses, transformers, 3 phase motor, and motor starters are applied. Quality installation and NEC standards are emphasized throughout the course.

10660110 DC Circuits 1 (1 cr.)

Introduces electrical safety and program procedures. The course covers Ohm's Law, power law, series circuits, and voltmeter, ammeter and ohmmeter applications. Number powers, electronic notations, circuit component recognition and diagrams, resistor power ratings, color code, Kirchhoff's voltage law and atomic structure are also included.

10660111 DC Circuits 2 (1 cr.)

Covers basic parallel and series-parallel circuits and their properties. Examines the theory, application and design of series-parallel circuits, such as loaded and unloaded voltage dividers and the Wheatstone bridge. Laboratory activities are performed to verify the theory.

Course Descriptions

10660112 DC Circuits 3 (1 cr.)	Covers capacitors and inductors including time constants and instantaneous voltage and current values of RC and RL circuits. Applications and various types of capacitors and inductors are discussed. Magnetism, electromagnetism, and devices, such as relays and solenoids, are also presented. Laboratory activities are performed to verify the theory.
10660114 AC Circuits 1 (1 cr.)	Covers AC waveforms and different voltage values including Peak, RMS, Average and Peak to Peak. The operation of transformers is also included. Laboratory activities using the oscilloscope are performed to verify the theory.
10660170 Ladder Logic & Control Devices (1 cr.)	Introduces hardwired components found in industrial applications used to control simple circuits. Students will learn about switches, relays, contactors, timers, and indicator lamps. Students will use their knowledge of these devices to wire various circuits. Students will use ladder logic diagrams to interconnect and label devices to make complete circuits.
10804113 College Technical Math 1A (3 cr.)	Topics include: solving linear equations; graphing; percent; proportions; measurement systems; computational geometry; and right triangle trigonometry. Emphasis will be on the application of skills to technical problems. Successful completion of College Technical Mathematics 1A and College Technical Mathematics 1B is the equivalent of College Technical Mathematics 1.
628 - Automated Fundamentals of Maintenance	
10620113 Hydraulics 1 (1 cr.)	Provides an introduction to fundamental principles and laws of fluid power, with a focus on hydraulics. Laboratory activities are performed to verify the theory.
10620142 Motors and Drives 2 (1 cr.)	Introduces AC Generators, Three Phase, and Single Phase motors. Starting methods for AC motors, including AC Drives, will be introduced. Control wiring and reversing circuits will also be introduced. Students will wire for Synchronous and Induction motor operation.
10620188 System Troubleshooting (1 cr.)	Develops troubleshooting skills by using several closed-loop systems on a level and flow process trainer. Students identify faults electrically inserted into this trainer by recognizing symptoms, creating and using flow charts for analysis, and finding the problem with test instruments.
10660110 DC Circuits 1 (1 cr.)	Introduces electrical safety and program procedures. The course covers Ohm's Law, power law, series circuits, and voltmeter, ammeter and ohmmeter applications. Number powers, electronic notations, circuit component recognition and diagrams, resistor power ratings, color code, Kirchhoff's voltage law and atomic structure are also included.

Course Descriptions

10660111 DC Circuits 2 (1 cr.)	Covers basic parallel and series-parallel circuits and their properties. Examines the theory, application and design of series-parallel circuits, such as loaded and unloaded voltage dividers and the Wheatstone bridge. Laboratory activities are performed to verify the theory.
10660112 DC Circuits 3 (1 cr.)	Covers capacitors and inductors including time constants and instantaneous voltage and current values of RC and RL circuits. Applications and various types of capacitors and inductors are discussed. Magnetism, electromagnetism, and devices, such as relays and solenoids, are also presented. Laboratory activities are performed to verify the theory.
10660114 AC Circuits 1 (1 cr.)	Covers AC waveforms and different voltage values including Peak, RMS, Average and Peak to Peak. The operation of transformers is also included. Laboratory activities using the oscilloscope are performed to verify the theory.
10660170 Ladder Logic & Control Devices (1 cr.)	Introduces hardwired components found in industrial applications used to control simple circuits. Students will learn about switches, relays, contactors, timers, and indicator lamps. Students will use their knowledge of these devices to wire various circuits. Students will use ladder logic diagrams to interconnect and label devices to make complete circuits.
10804113 College Technical Math 1A (3 cr.)	Topics include: solving linear equations; graphing; percent; proportions; measurement systems; computational geometry; and right triangle trigonometry. Emphasis will be on the application of skills to technical problems. Successful completion of College Technical Mathematics 1A and College Technical Mathematics 1B is the equivalent of College Technical Mathematics 1.
628 - Automated Intro to PLC Control	
10628101 Concepts of Programming for Technicians (1 cr.)	Introduces students to programming fundamentals necessary in automation related careers. Students will discuss proper programming structures including flow chart and pseudocode programming. Students will create and troubleshoot programs.
10628151 PLC 1 (1 cr.)	Introduces Programmable Logic Controllers (PLC)s and RSLogix 500 Programming Software. The PLC hardware will consist of Allen Bradley products. Students use the RSLogix 500 programming software to create logical solutions for real world applications. The applications will require students to create, download, and debug programs in RSLogix 500.

Course Descriptions

10628152 PLC 2 (1 cr.)	Introduces Programmable Logic Controllers (PLC)s and Studio 5000 (formerly RSLogix5000) Programming Software. The PLC hardware will consist of Allen Bradley products. Students will configure Ethernet communications to connect to the Allen Bradley PLC hardware. Students will use Studio 5000 programming software to create logical solutions for real world applications. The applications will require students to create, download, and debug their programs. Students will study industrial sensors and their uses. Students will wire and test sensor operations.
10628153 PLC 3 (1 cr.)	Continues using the Allen Bradley PLC hardware platform with Studio 5000 programming software. Introduces Analog I/O and scaling for program interfacing. Scaling with math instructions, data handling with FIFO/LIFO instructions, and sequencer SQI/SQO instructions are all introduced.
10660110 DC Circuits 1 (1 cr.)	Introduces electrical safety and program procedures. The course covers Ohm's Law, power law, series circuits, and voltmeter, ammeter and ohmmeter applications. Number powers, electronic notations, circuit component recognition and diagrams, resistor power ratings, color code, Kirchhoff's voltage law and atomic structure are also included.
10660170 Ladder Logic & Control Devices (1 cr.)	Introduces hardwired components found in industrial applications used to control simple circuits. Students will learn about switches, relays, contactors, timers, and indicator lamps. Students will use their knowledge of these devices to wire various circuits. Students will use ladder logic diagrams to interconnect and label devices to make complete circuits.
10804113 College Technical Math 1A (3 cr.)	Topics include: solving linear equations; graphing; percent; proportions; measurement systems; computational geometry; and right triangle trigonometry. Emphasis will be on the application of skills to technical problems. Successful completion of College Technical Mathematics 1A and College Technical Mathematics 1B is the equivalent of College Technical Mathematics 1.

628 - Automated Mechanical Maintenance

10620111 Pneumatics 1 (1 cr.)	Provides an introduction to fundamental principles and laws of fluid power, with a focus on pneumatics. Laboratory activities are performed to verify the theory.
10620113 Hydraulics 1 (1 cr.)	Provides an introduction to fundamental principles and laws of fluid power, with a focus on hydraulics. Laboratory activities are performed to verify the theory.
10620164 Elements of Machines 1 (1 cr.)	Emphasizes the mechanical elements of industrial machines. Principles of leveling motors, fasteners, bearings, and couplings are covered. Terminology, selection, and proper installation and maintenance are stressed.

Course Descriptions

10620165 Elements of Machines 2 (1 cr.)	Emphasizes the mechanical elements of industrial machines. Principles of power transmission, belt drives, and chain drives are covered. Terminology, selection, and proper installation and maintenance are stressed.
10628187 AutoCAD Fundamentals (1 cr.)	Teaches students to draw, edit, dimension, and plot drawings with the AutoCAD software.
10628188 Blueprint Reading & AutoCAD (1 cr.)	Introduces students to reading both electrical schematics and mechanical prints, while utilizing the AutoCAD software.
10804113 College Technical Math 1A (3 cr.)	Topics include: solving linear equations; graphing; percent; proportions; measurement systems; computational geometry; and right triangle trigonometry. Emphasis will be on the application of skills to technical problems. Successful completion of College Technical Mathematics 1A and College Technical Mathematics 1B is the equivalent of College Technical Mathematics 1.

628 - Automated PLC Integration

10628101 Concepts of Programming for Technicians (1 cr.)	Introduces students to programming fundamentals necessary in automation related careers. Students will discuss proper programming structures including flow chart and pseudocode programming. Students will create and troubleshoot programs.
10628151 PLC 1 (1 cr.)	Introduces Programmable Logic Controllers (PLC)s and RSLogix 500 Programming Software. The PLC hardware will consist of Allen Bradley products. Students use the RSLogix 500 programming software to create logical solutions for real world applications. The applications will require students to create, download, and debug programs in RSLogix 500.
10628152 PLC 2 (1 cr.)	Introduces Programmable Logic Controllers (PLC)s and Studio 5000 (formerly RSLogix5000) Programming Software. The PLC hardware will consist of Allen Bradley products. Students will configure Ethernet communications to connect to the Allen Bradley PLC hardware. Students will use Studio 5000 programming software to create logical solutions for real world applications. The applications will require students to create, download, and debug their programs. Students will study industrial sensors and their uses. Students will wire and test sensor operations.
10628153 PLC 3 (1 cr.)	Continues using the Allen Bradley PLC hardware platform with Studio 5000 programming software. Introduces Analog I/O and scaling for program interfacing. Scaling with math instructions, data handling with FIFO/LIFO instructions, and sequencer SQI/SQO instructions are all introduced.
10628159 Operator Interfaces (1 cr.)	Introduces Human Machine Interface (HMI) development. Students create Displays, HMI tags, Basic Objects, Object Animations, Global Objects, Alarms, and Trending.

Course Descriptions

10628176 Enterprise Integration 1 (1 cr.) Introduces students to PC based Human Machine Interface (HMI) development. The course uses Wonderware as a platform to design and develop the various components in most HMIs. Components include Basic Objects, Animations, Scripting, Alarms, Trending, and Security.

10628177 Enterprise Integration 2 (1 cr.) Introduces students to PC based Human Machine Interface (HMI) development. The course uses FactoryTalk Site Edition (SE) as a platform to design and develop the various components in most HMIs. Components include Basic Objects, Animations, Macros, Global Objects, Recipes, Local Messages, Alarms, Trending, and Security.

10660110 DC Circuits 1 (1 cr.) Introduces electrical safety and program procedures. The course covers Ohm's Law, power law, series circuits, and voltmeter, ammeter and ohmmeter applications. Number powers, electronic notations, circuit component recognition and diagrams, resistor power ratings, color code, Kirchhoff's voltage law and atomic structure are also included.

10660170 Ladder Logic & Control Devices (1 cr.) Introduces hardwired components found in industrial applications used to control simple circuits. Students will learn about switches, relays, contactors, timers, and indicator lamps. Students will use their knowledge of these devices to wire various circuits. Students will use ladder logic diagrams to interconnect and label devices to make complete circuits.

10804113 College Technical Math 1A (3 cr.) Topics include: solving linear equations; graphing; percent; proportions; measurement systems; computational geometry; and right triangle trigonometry. Emphasis will be on the application of skills to technical problems. Successful completion of College Technical Mathematics 1A and College Technical Mathematics 1B is the equivalent of College Technical Mathematics 1.

662 - Electrical Engineering Electrical Engineering Technology

10605106 Solder Rework & Repair-IPC Prep (1 cr.) Teaches students how to produce high-quality soldered connections that meet the IPC standard regarding materials, methods and verification.

10605111 AC Circuits 2-Electronics/EET (1 cr.) Covers the application of basic theory to AC circuits. Topics include sine-wave description, reactance, phase and fundamental AC power concepts. RC, RL and RLC circuits using complex numbers are analyzed. Laboratory and computer analysis activities are performed to enhance the theory.

10605113 DC Circuits 4 (1 cr.) Examines the theory, application and design of series/parallel circuits including loaded and unloaded voltage dividers. Circuit analysis methods such as superposition, Thevenin, and Norton theorems are introduced. Circuit simulation software is used to aid in the analysis and prediction of circuit operation. Laboratory activities are performed to verify the theory.

Course Descriptions

10605116 AC Circuits 3 (1 cr.)	Explores reactive circuits containing resistors, capacitors, and inductors. Passive filter circuits are introduced along with resonant circuits. Circuit simulation is implemented to aid in circuit analysis.
10605118 Circuit Analysis (2 cr.)	Examines advanced AC circuits, filter applications, and transformers through analysis, computer simulation, and in the lab using the latest test equipment. In-depth coverage utilizing complex numbers, polar & rectangular operators, superposition, Thevenin, Norton, and other circuit analysis methods are implemented.
10605119 Linear Electronics (3 cr.)	Emphasizes modern linear integrated circuits (ICs). Covered in depth are the operational amplifier IC and its circuit applications: amplifying, comparing, summing, wave shaping, regulating, oscillating and filtering. Laboratory time is spent simulating and constructing circuits and evaluating and troubleshooting circuitry.
10605125 Semiconductors 3 (1 cr.)	Covers DC and AC analysis of amplifiers. Bypass and coupling capacitor functions, along with circuit limitations due to circuit configuration, are also examined.
10605130 Digital 1 (1 cr.)	Introduces digital electronics including Boolean, the operation of logic gates, and the theory of combination logic circuits. Laboratory activities are performed to verify the theory.
10605131 Digital Electronics 2 - Electronics/EET (1 cr.)	Examines data manual usage. This course introduces programmable logic devices and Karnaugh mapping. It also covers encoders, decoders, multiplexers, binary adders and parity circuits. Laboratory activities are performed to verify the theory.
10605132 Digital Electronics 3 (2 cr.)	Covers circuit reduction techniques such as Boolean Algebra, Karnaugh Mapping, Sum of Products, etc. Laboratory activities are performed to verify the theory.
10605146 Embedded Programming 2 (1 cr.)	Continues with topics from Embedded Programming 1 and further explores embedded controller systems operation, architecture, and programming. Students will lay the groundwork for future courses and electronic projects while experimenting with programming language concepts and interfacing.
10605148 Embedded Programming 3 (1 cr.)	Continues with topics from Embedded Programming 2 and further explores embedded controller systems operation, architecture and programming. Successful students will exit this course prepared to develop and implement larger projects involving more advanced topics relative to microcontrollers.
10605160 Microcontroller Interfacing (3 cr.)	Explores mid-range microcontroller functionality using C programming to develop embedded applications. Projects will utilize many of the microcontroller features such as USB, Ethernet, scheduled and non-scheduled interrupts, analog to digital conversion, etc.

Course Descriptions

10660110 DC Circuits 1 (1 cr.)	Introduces electrical safety and program procedures. The course covers Ohm's Law, power law, series circuits, and voltmeter, ammeter and ohmmeter applications. Number powers, electronic notations, circuit component recognition and diagrams, resistor power ratings, color code, Kirchhoff's voltage law and atomic structure are also included.
10660111 DC Circuits 2 (1 cr.)	Covers basic parallel and series-parallel circuits and their properties. Examines the theory, application and design of series-parallel circuits, such as loaded and unloaded voltage dividers and the Wheatstone bridge. Laboratory activities are performed to verify the theory.
10660112 DC Circuits 3 (1 cr.)	Covers capacitors and inductors including time constants and instantaneous voltage and current values of RC and RL circuits. Applications and various types of capacitors and inductors are discussed. Magnetism, electromagnetism, and devices, such as relays and solenoids, are also presented. Laboratory activities are performed to verify the theory.
10660114 AC Circuits 1 (1 cr.)	Covers AC waveforms and different voltage values including Peak, RMS, Average and Peak to Peak. The operation of transformers is also included. Laboratory activities using the oscilloscope are performed to verify the theory.
10660128 Semiconductors 1 (1 cr.)	Introduces semiconductor materials, the operation of diodes, Zener diodes and the construction of rectifier and filter circuits. Fundamental transistor construction and operation is also introduced. Laboratory experiments are performed to verify the theory.
10660129 Semiconductors 2 (1 cr.)	Introduces students to transistor operation as a switch, SCR, Triac, and Operational Amplifier operation and application.
10660151 Embedded Programming 1 (1 cr.)	Introduces students to embedded computer systems through exploration of microcontroller operation, architecture and programming. Students will lay the groundwork for future courses and electronic projects while experimenting with programming language concepts and basic interfacing.
10660163 Construction Techniques (1 cr.)	Introduces the use of common hand tools used by technicians. The safe use and application of hand and power tools is practiced through construction projects. Quality workmanship and craftsmanship are emphasized.
10660181 Technical Software Essentials (1 cr.)	Introduces students to the Microsoft Office family of products. Students will create and edit Word documents, Excel spreadsheets, and Access databases.
10660184 Computer Systems & Networks 1 (1 cr.)	Focuses on computer terms, computer hardware, computer functions, security and operating systems. Basic networking concepts are also introduced.

Course Descriptions

- 10801195 Written Communication (3 cr.)** Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
- 10801197 Technical Reporting (3 cr.)** Prepare and present written, oral, and visual communication products, including but not limited to instructions, proposals, informal and formal reports. Produce clear, usable communication by incorporating information design principles, arranging content to satisfy diverse audience needs, and presenting visuals for various contexts. Designed to develop collaborative communication practices, information literacy skills, and ethically responsible professional communication strategies.
- 10804118 Intermediate Algebra with Applications (4 cr.)** This course offers algebra content with applications and an introduction to functions and complex numbers. Content builds upon the arithmetic of real numbers by using variable equations to solve problems. Topics include graphing and finding algebraic solutions for linear equations and inequalities, quadratic, exponential, polynomial, radical, and rational equations.
- 10804181 Calculus 2 (4 cr.)** Designed for students of mathematics, science, and engineering. This course continues the study of analytic geometry and calculus. Topics included in this course are techniques of differentiation and integration of transcendental functions, analysis of infinite sequences and series, an introduction to first-order differential equations, parametric equations and derivatives of parametric curves, polar coordinates in the plane and integrals using polar coordinates, the analytic geometry of the conic sections, and iterated integration.
- 10804197 College Algebra and Trigonometry with Applications (5 cr.)** This course covers skills needed for success in Calculus and many application areas at the baccalaureate level. Algebra topics include the real and complex number systems, polynomials, exponents, radicals, solving equations and inequalities, relations and functions, systems of equations and inequalities, graphing, and conic sections. Trigonometry topics include the unit circle, trigonometric functions, graphs, identities, equations, inverse functions, solutions of triangles, complex numbers, polar coordinates, and vectors.
- 10804198 Calculus 1 (4 cr.)** Introduction to differential and integral calculus and plane analytic geometry; Limits, derivatives, and graphs of algebraic, trigonometric, exponential, and logarithmic functions; antiderivatives, the definite integral, and the fundamental theorem of calculus, with applications.

Course Descriptions

10806143 College Physics 1 (3 cr.) Presents the applications and theory of basic physics principles. This course emphasizes problem solving, laboratory investigation and applications. Topics include laboratory safety, unit conversions and analysis, kinematics, dynamics, work, energy, power, temperature and heat.

10809195 Economics (3 cr.) This course is designed to give an overview of microeconomics, macroeconomics, and international economics. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues.

10809196 Intro to Sociology (3 cr.) Introduces students to the fundamental sociological concepts, including sociological perspectives, research methods, the significance of culture in society, and the socialization process. Other topics include deviance, the impact of groups on behavior, societal inequities, global changes, the role of social institutions, and social stratification.

10809199 Psychology of Human Relations (3 cr.) Explores the relationship between the general principles of psychology and our everyday lives. Students are given the opportunity to achieve a deepened sense of awareness of themselves and others. This understanding enables students to improve their relationships with others at work, in the family, and in society.

699 - Technical Digital Media

10104108 Social Media Marketing (3 cr.) Learn to successfully plan, deploy and establish a brand's social media presence. A mix of online research projects, case studies and class exercises will be used to enhance student knowledge. Social media platforms and analysis tools to develop social media campaigns will also be used.

10152105 Web Graphics, Introduction to (3 cr.) Introduces the fundamental concepts necessary to generate and prepare graphics for Web pages. The course will focus on raster as well as vector images. Areas addressed will be color selection, layout, text, optimizing images, creating backgrounds, slicing, creating navigation, transparent graphics and animated graphics. Adobe software will be utilized.

10699123 Video Publishing (1 cr.) Introduces video development and publishing as used by professional communicators. This 9-week course will stress how to integrate video in documentation and websites for business purposes.

699 - Technical Professional Communications

10103120 MS Office Suite, Introduction (2 cr.) Provides an opportunity to gain technical skills employers are seeking, by using the features in Outlook, Word, Excel, and PowerPoint. Through hands-on course work, students will be able to integrate Word, Excel and PowerPoint.

Course Descriptions

10104108 Social Media Marketing (3 cr.)	Learn to successfully plan, deploy and establish a brand's social media presence. A mix of online research projects, case studies and class exercises will be used to enhance student knowledge. Social media platforms and analysis tools to develop social media campaigns will also be used.
10104151 Marketing 1, Principles of (3 cr.)	Introduces students to the marketing function and process. Techniques for analyzing the marketing environment and understanding customers' needs and wants are explored. Students apply marketing principles to select target markets, develop positioning and create marketing programs to serve markets. Topics include product management and development, pricing, distribution and promotion strategies.
10152105 Web Graphics, Introduction to (3 cr.)	Introduces the fundamental concepts necessary to generate and prepare graphics for Web pages. The course will focus on raster as well as vector images. Areas addressed will be color selection, layout, text, optimizing images, creating backgrounds, slicing, creating navigation, transparent graphics and animated graphics. Adobe software will be utilized.
10699102 Intercultural Communication (3 cr.)	Sensitizes students to the needs and expectations of people of other cultures and introduces skills necessary for effective intercultural communication. Topics include appropriate verbal and nonverbal communication, written communication patterns, business and social etiquette, and intercultural negotiation strategies. Students will also examine universal systems, cultural values and problems associated with language diversity.
10699104 Research Methods for Professional Communications (3 cr.)	Introduces students to the research phases of professional research and product testing. Students will learn how to conduct and analyze quantitative and qualitative studies, conduct surveys and develop and implement proper usability testing.
10699105 Writing Content for the Web (3 cr.)	Focuses on technical writing strategies and methods of designing and writing for Web sites that support the workplace. Current trends in Search Engine Optimization (SEO) will be introduced.
10699106 Proposal/Grant Writing (3 cr.)	Introduces the skills to evaluate, assess and apply appropriate writing principles in writing grants and proposals. Students will complete this class with direct experience in writing a grant.
10699112 Introduction to Professional Communications (3 cr.)	Provides new students with firm knowledge of the Professional Communications program. Students will explore the careers associated with this field and work on improving technical writing skills. Technical editing and proofreading will be introduced in this course.

Course Descriptions

10699116 Developing Product Documentation (3 cr.)	Focuses on the preparation of various types of manuals—procedural and instructional. Skills addressed include layout and design, collaboration and project management.
10699117 Designing Content for the Web (3 cr.)	Focuses on design and delivery of professional quality Web content. Students will learn to incorporate usability in Web page design, terminology, appropriate document file formats and incorporate optimized graphic images.
10699120 Information Design (3 cr.)	Prepares students to design and manage information using a variety of methods—instructional design strategies, performance support system software and information systems theories. Students will be required to use project management techniques in order to create a simple training session for online delivery and develop a support system or document using a content management system or help authoring tool.
10699123 Video Publishing (1 cr.)	Introduces video development and publishing as used by professional communicators. This 9-week course will stress how to integrate video in documentation and websites for business purposes.
10699141 Professional Communications Internship (3 cr.)	Provides the fourth semester student with on-the-job experience related to professional communications. Students will be assigned appropriate workplace projects, will help design assessment criteria for the experience, and will be evaluated by the workplace mentors and the practicum instructor after completing a self-assessment of the work during this experience.
10801195 Written Communication (3 cr.)	Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
10801196 Oral/Interpersonal Comm (3 cr.)	Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.

Course Descriptions

- 10801197 Technical Reporting (3 cr.)** Prepare and present written, oral, and visual communication products, including but not limited to instructions, proposals, informal and formal reports. Produce clear, usable communication by incorporating information design principles, arranging content to satisfy diverse audience needs, and presenting visuals for various contexts. Designed to develop collaborative communication practices, information literacy skills, and ethically responsible professional communication strategies.
- 10804107 College Mathematics (3 cr.)** This course is designed to review and develop fundamental concepts of mathematics in the areas of algebra, geometry, trigonometry, measurement and data. Algebra topics emphasize simplifying algebraic expressions, solving linear equations and inequalities with one variable, solving proportions and percent applications. Geometry and trigonometry topics include; finding areas and volumes of geometric figures, applying similar and congruent triangles, applying Pythagorean Theorem, and solving right triangles using trigonometric ratios. Measurement topics emphasize the application of measurement concepts and conversion techniques within and between U.S. customary and metric system to solve problems. Data topics emphasize data organization and summarization skills, including: frequency distributions, central tendency, relative position and measures of dispersion. Special emphasis is placed on problem solving, critical thinking and logical reasoning, making connections, and using calculators.
- 10809195 Economics (3 cr.)** This course is designed to give an overview of microeconomics, macroeconomics, and international economics. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues.
- 10809198 Intro to Psychology (3 cr.)** This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.
- 10890100 College Success: On Course (1 cr.)** On Course helps you learn a number of proven strategies for creating greater academic, professional and personal success. You will discover how to create a rich, fulfilling life by developing new beliefs and behaviors. College Success: On Course empowers you to make wise choices in your academic and personal life which leads to improved experiences and outcomes.

Course Descriptions

- 10104108 Social Media Marketing (3 cr.)** Learn to successfully plan, deploy and establish a brand's social media presence. A mix of online research projects, case studies and class exercises will be used to enhance student knowledge. Social media platforms and analysis tools to develop social media campaigns will also be used.
- 10699100 Writing for the Media (3 cr.)** This course gives students the skills and practice needed to develop various types of communication products for media outlets. Students use journalism strategies to create various types of communication products, including articles, audiovisual scripts, and press releases.
- 10801141 Introduction to Mass Communications (3 cr.)** Explores communication in media and media literacy by providing insight into the important issues that confront students as consumers and purveyors of mass media within the workforce and in society. The mass media revolution, including media technologies, the evolution of media content and platforms, including new media, the impact of media communications on business and society as a whole, media bias, and media law and ethics form the basis of the course.

699 - Technical Workplace Communication

- 10103120 MS Office Suite, Introduction (2 cr.)** Provides an opportunity to gain technical skills employers are seeking, by using the features in Outlook, Word, Excel, and PowerPoint. Through hands-on course work, students will be able to integrate Word, Excel and PowerPoint.
- 10801195 Written Communication (3 cr.)** Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
- 10801196 Oral/Interpersonal Comm (3 cr.)** Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.

699 - Technical Writing for the Web

- 10152105 Web Graphics, Introduction to (3 cr.)** Introduces the fundamental concepts necessary to generate and prepare graphics for Web pages. The course will focus on raster as well as vector images. Areas addressed will be color selection, layout, text, optimizing images, creating backgrounds, slicing, creating navigation, transparent graphics and animated graphics. Adobe software will be utilized.
- 10699105 Writing Content for the Web (3 cr.)** Focuses on technical writing strategies and methods of designing and writing for Web sites that support the workplace. Current trends in Search Engine Optimization (SEO) will be introduced.

Course Descriptions

10699117 Designing Content for the Web (3 cr.) Focuses on design and delivery of professional quality Web content. Students will learn to incorporate usability in Web page design, terminology, appropriate document file formats and incorporate optimized graphic images.

10801195 Written Communication (3 cr.) Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.

699 - Technical Writing, Grant/Proposal

10699104 Research Methods for Professional Communications (3 cr.) Introduces students to the research phases of professional research and product testing. Students will learn how to conduct and analyze quantitative and qualitative studies, conduct surveys and develop and implement proper usability testing.

10699106 Proposal/Grant Writing (3 cr.) Introduces the skills to evaluate, assess and apply appropriate writing principles in writing grants and proposals. Students will complete this class with direct experience in writing a grant.

10801195 Written Communication (3 cr.) Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.

800 - General Education University Transfer Associate of Arts

10801136 English Composition 1 (3 cr.) Learners develop and apply skills in all aspects of the writing process. Through a variety of learning activities and written documents, learners employ rhetorical strategies, plan, organize and revise content, apply critical reading strategies, locate and evaluate information, integrate and document sources, and apply standardized English language conventions.

10801140 Introduction to Literature (3 cr.) Recommended as a first course in literary analysis, this course introduces students to the major genres of literature and addresses issues related to writing about literature and/or other texts.

Course Descriptions

10801198 Speech (3 cr.)	Explores the fundamentals of effective oral presentation to small and large groups. Topic selection, audience analysis, methods of organization, research, supporting evidence, delivery techniques, active listening, and other essential elements of speaking successfully, form the basis of the course. Includes informative, persuasive, and occasion speech presentations. Audience requirements to be determined by the individual colleges.
10801223 English Composition 2 (3 cr.)	Students continue the study of academic writing to attain advanced writing and critical thinking skills. Students learn textual synthesis, analysis, advanced source integration, and rhetorical strategies.
10802171 Spanish 1 (4 cr.)	For students beginning the study of Spanish. Emphasizes development of basic communicative skills through practice in listening, speaking, reading and writing. Stresses vocabulary and grammar to enhance students' ability to speak and write in Spanish. Study of customs and values provides an increased awareness of Spanish speaking cultures. On completion students are expected to participate in uncomplicated conversations on everyday topics.
10803111 US History to 1877 (3 cr.)	Surveys U.S. political, social, and economic development from the pre-colonial era to the post-Civil War period. Emphasizes reading, writing, and discussion.
10804135 Quantitative Reasoning (3 cr.)	This course is intended to develop analytic reasoning and the ability to solve quantitative problems. Topics to be covered may include: construction & interpretation of graphs; descriptive statistics; geometry & spatial visualizations; math of finance; functions and modeling; probability; and logic. Appropriate use of units and dimensions, estimates, mathematical notation, and available technology will be emphasized throughout the course.
10806114 General Biology (4 cr.)	Introduces general biological concepts and principles. Emphasis is on cell structure and function, genetics, evolution, and taxonomical relationships. Consideration is also given to diversity among the various kingdoms.
10806134 General Chemistry (4 cr.)	Covers the fundamentals of chemistry. Topics include scientific method, problem-solving using quantitative, characteristics of matter, periodic relationships of elements, chemical bonding, chemical reactions, chemical equilibrium, analysis of chemical substances, characteristics of aqueous solutions, acids, bases, and gas laws.
10807102 Nutrition for Life (1 cr.)	Examines the nutrient requirements of healthy individuals, nutrient categories, and food sources as well as their characteristics in relation to physiological functions, metabolism and disease prevention.

Course Descriptions

10809103 Think Critically & Creatively (3 cr.)	Provides instruction about critical and creative thinking that is in high demand in all occupations. Models, theories, and processes provide the foundation for learning logical thinking strategies. Students will apply a systematic approach to problem solving by analyzing the problem, assessing possible solutions, and making effective decisions. In addition, students will generate ideas and analyze complex issues. This course assists students with developing a critical thinking mindset which is essential at every level of personal and professional life.
10809143 Microeconomics (3 cr.)	This course examines the behavior of individual decision makers, primarily consumers and firms. Topics include choices of how much to consume and to produce, the functioning of perfectly and imperfectly competitive markets, the conditions under which markets may fail, and arguments for and against government intervention. The student applies the fundamental tools of economics to real world problems.
10809166 Intro to Ethics: Theory & App (3 cr.)	This course provides a basic understanding of the theoretical foundations of ethical thought. Diverse ethical perspectives will be used to analyze and compare relevant issues. Students will critically evaluate individual, social and professional standards of behavior, and apply a systematic decision-making process to these situations.
10809172 Introduction to Diversity Studies (3 cr.)	This course introduces the study of diversity from a local to a global perspective using a holistic, interdisciplinary approach that encourages exploration and prepares students to work in a diverse environment. The course introduces basic diversity concepts, examines the impact of bias and power differentials among groups, explores the use of culturally responsive communication strategies, and compares forces that shape diversity in an international context.
10809196 Intro to Sociology (3 cr.)	Introduces students to the fundamental sociological concepts, including sociological perspectives, research methods, the significance of culture in society, and the socialization process. Other topics include deviance, the impact of groups on behavior, societal inequities, global changes, the role of social institutions, and social stratification.
10809198 Intro to Psychology (3 cr.)	This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.

800 - General Education University Transfer Associate of Science

Course Descriptions

- 10801136 English Composition 1 (3 cr.)** Learners develop and apply skills in all aspects of the writing process. Through a variety of learning activities and written documents, learners employ rhetorical strategies, plan, organize and revise content, apply critical reading strategies, locate and evaluate information, integrate and document sources, and apply standardized English language conventions.
- 10801198 Speech (3 cr.)** Explores the fundamentals of effective oral presentation to small and large groups. Topic selection, audience analysis, methods of organization, research, supporting evidence, delivery techniques, active listening, and other essential elements of speaking successfully, form the basis of the course. Includes informative, persuasive, and occasion speech presentations. Audience requirements to be determined by the individual colleges.
- 10801223 English Composition 2 (3 cr.)** Students continue the study of academic writing to attain advanced writing and critical thinking skills. Students learn textual synthesis, analysis, advanced source integration, and rhetorical strategies.
- 10802171 Spanish 1 (4 cr.)** For students beginning the study of Spanish. Emphasizes development of basic communicative skills through practice in listening, speaking, reading and writing. Stresses vocabulary and grammar to enhance students' ability to speak and write in Spanish. Study of customs and values provides an increased awareness of Spanish speaking cultures. On completion students are expected to participate in uncomplicated conversations on everyday topics.
- 10803111 US History to 1877 (3 cr.)** Surveys U.S. political, social, and economic development from the pre-colonial era to the post-Civil War period. Emphasizes reading, writing, and discussion.
- 10804189 Introductory Statistics (3 cr.)** Students taking Introductory Statistics display data with graphs, describe distributions with numbers perform correlation and regression analyses, and design experiments. They use probability and distributions to make predictions, estimate parameters, and test hypotheses. They draw inferences about relationships including ANOVA.
- 10804197 College Algebra and Trigonometry with Applications (5 cr.)** This course covers skills needed for success in Calculus and many application areas at the baccalaureate level. Algebra topics include the real and complex number systems, polynomials, exponents, radicals, solving equations and inequalities, relations and functions, systems of equations and inequalities, graphing, and conic sections. Trigonometry topics include the unit circle, trigonometric functions, graphs, identities, equations, inverse functions, solutions of triangles, complex numbers, polar coordinates, and vectors.

Course Descriptions

10806114 General Biology (4 cr.)	Introduces general biological concepts and principles. Emphasis is on cell structure and function, genetics, evolution, and taxonomical relationships. Consideration is also given to diversity among the various kingdoms.
10806134 General Chemistry (4 cr.)	Covers the fundamentals of chemistry. Topics include scientific method, problem-solving using quantitative, characteristics of matter, periodic relationships of elements, chemical bonding, chemical reactions, chemical equilibrium, analysis of chemical substances, characteristics of aqueous solutions, acids, bases, and gas laws.
10806154 General Physics 1 (4 cr.)	Presents the applications and theory of basic physics principles. This course emphasizes problem-solving, laboratory investigation, and applications. Topics include unit conversion, vector analysis, kinematics and dynamics of particles, rotational mechanics, fluids, heat and temperature, and harmonic motion and waves.
10807102 Nutrition for Life (1 cr.)	Examines the nutrient requirements of healthy individuals, nutrient categories, and food sources as well as their characteristics in relation to physiological functions, metabolism and disease prevention.
10809166 Intro to Ethics: Theory & App (3 cr.)	This course provides a basic understanding of the theoretical foundations of ethical thought. Diverse ethical perspectives will be used to analyze and compare relevant issues. Students will critically evaluate individual, social and professional standards of behavior, and apply a systematic decision-making process to these situations.
10809172 Introduction to Diversity Studies (3 cr.)	This course introduces the study of diversity from a local to a global perspective using a holistic, interdisciplinary approach that encourages exploration and prepares students to work in a diverse environment. The course introduces basic diversity concepts, examines the impact of bias and power differentials among groups, explores the use of culturally responsive communication strategies, and compares forces that shape diversity in an international context.
10809196 Intro to Sociology (3 cr.)	Introduces students to the fundamental sociological concepts, including sociological perspectives, research methods, the significance of culture in society, and the socialization process. Other topics include deviance, the impact of groups on behavior, societal inequities, global changes, the role of social institutions, and social stratification.

863 - Intensive English English Language Competency Academic

Course Descriptions

10863105 English American Language and Culture: Part 1 (3 cr.)

During this class you will be working on the skills that promote stronger language abilities, i.e. speaking, listening, reading and writing. In addition, you will also be strengthening the skills needed to be a successful university student, i.e. note-taking, critical thinking and classroom participation. The course also provides an opportunity to explore American Culture through Multi Media (film, television, periodicals and music). We will be discussing class, race, education and gender roles in society. New students, prior to registration contact 920-735-2443 or learnenglish@fvtc.edu for an assessment to determine your proficiency in English.

10863106 English American Language and Culture: Part 2 (3 cr.)

During this class you will be working on the skills that promote advanced language abilities, i.e. speaking, listening, reading and writing. In addition, you will also be strengthening the skills needed to be a successful university student, i.e. note-taking, critical thinking and classroom participation. The course also provides an opportunity to explore American Culture through Multi Media (film, television, periodicals and music). We will be discussing class, race, education and gender roles in society. New students, prior to registration contact 920-735-2443 or learnenglish@fvtc.edu for an assessment to determine your proficiency in English.

10863112 English Grammar Academic (3 cr.)

Introduce high-level grammar concepts for the high level ELL students. Students will learn a sophisticated analysis of the grammatical structures of English. New students, prior to registration contact 920-735-2443 or learnenglish@fvtc.edu for an assessment to determine your proficiency in English.

10863119 American English Pronunciation (3 cr.)

Develop English pronunciation to make communication more comprehensible. Focus on vowel clarification, consonant reproduction, intonation, stress, blends, and reductions. In addition, students have the opportunity to acquire new vocabulary, practice presentation skills, and present monologues and dialogue. New students, prior to registration contact 920-735-2443 or learnenglish@fvtc.edu for an assessment to determine your proficiency in English.

10863137 English Writing Academic (3 cr.)

For those who want to learn English as a foreign language students will develop the tools needed to write academic essays in many rhetorical styles such as comparing, contrasting, describing causes and effects, and analyzing and supporting arguments. Students will also develop and apply strategies for taking an essay exam. In addition, the course introduces how to incorporate paraphrases and quotations from other writers. Finally, students will complete a library research paper. New students, prior to registration contact 920-735-2443 or learnenglish@fvtc.edu for an assessment to determine your proficiency in English.

Course Descriptions

10863105 English American Language and Culture: Part 1 (3 cr.)

During this class you will be working on the skills that promote stronger language abilities, i.e. speaking, listening, reading and writing. In addition, you will also be strengthening the skills needed to be a successful university student, i.e. note-taking, critical thinking and classroom participation. The course also provides an opportunity to explore American Culture through Multi Media (film, television, periodicals and music). We will be discussing class, race, education and gender roles in society. New students, prior to registration contact 920-735-2443 or learnenglish@fvtc.edu for an assessment to determine your proficiency in English.

10863106 English American Language and Culture: Part 2 (3 cr.)

During this class you will be working on the skills that promote advanced language abilities, i.e. speaking, listening, reading and writing. In addition, you will also be strengthening the skills needed to be a successful university student, i.e. note-taking, critical thinking and classroom participation. The course also provides an opportunity to explore American Culture through Multi Media (film, television, periodicals and music). We will be discussing class, race, education and gender roles in society. New students, prior to registration contact 920-735-2443 or learnenglish@fvtc.edu for an assessment to determine your proficiency in English.

10863116 English Listening & Speaking Development (3 cr.)

Provides comprehensive language training focusing on further developing communication, writing skills and cultural awareness necessary for English language learners to prepare for college-level technical programs. Prepares students from an intermediate to advanced level of language proficiency. Listening and speaking skills as well as study skills will be emphasized. New students, prior to registration contact 920-735-2443 or learnenglish@fvtc.edu for an assessment to determine your proficiency in English.

10863126 English Reading Development (3 cr.)

Provides comprehensive language training focusing on further developing communication, writing skills and cultural awareness necessary for English language learners to prepare for college-level technical programs. Prepares students from an intermediate to advanced level of language proficiency. Reading and vocabulary skills as well as study skills will be emphasized. New students, prior to registration contact 920-735-2443 or learnenglish@fvtc.edu for an assessment to determine your proficiency in English.

Course Descriptions

10863136 English Writing Development (3 cr.) Provides comprehensive language training focusing on further developing communication, writing skills and cultural awareness necessary for English language learners to prepare for college-level technical programs. Prepares students from an intermediate to advanced level of language proficiency. Writing and grammar as well as study skills will be emphasized. New students, prior to registration contact 920-735-2443 or learnenglish@fvtc.edu for an assessment to determine your proficiency in English.

863 - Intensive English English Language Competency Foundations

10863108 English Grammar Foundations (3 cr.) Introduce foundation-level grammar concepts for the Beginner-Level ELL students. Students will learn to analyze and use grammatical structures of English. New students, prior to registration contact 920-735-2443 or learnenglish@fvtc.edu for an assessment to determine your proficiency in English.

10863114 English Listening & Speaking Foundations (3 cr.) Provides comprehensive language training sequence focusing on developing communication, writing skills, and cultural awareness necessary for English language learners to prepare for college level technical programs. Listening and speaking skills as well as study skills will be emphasized. New students, prior to registration contact 920-735-2443 or learnenglish@fvtc.edu for an assessment to determine your proficiency in English.

10863119 American English Pronunciation (3 cr.) Develop English pronunciation to make communication more comprehensible. Focus on vowel clarification, consonant reproduction, intonation, stress, blends, and reductions. In addition, students have the opportunity to acquire new vocabulary, practice presentation skills, and present monologues and dialogue. New students, prior to registration contact 920-735-2443 or learnenglish@fvtc.edu for an assessment to determine your proficiency in English.

10863124 English Reading Foundations (3 cr.) Provides comprehensive language training focusing on developing communication, writing skills, and cultural awareness necessary for English language learners to prepare for college level technical programs. Reading and vocabulary skills as well as study skills will be emphasized. New students, prior to registration contact 920-735-2443 or learnenglish@fvtc.edu for an assessment to determine your proficiency in English.

10863129 English Writing Foundations (3 cr.) Provides comprehensive language training focusing on developing writing skills, communication and cultural awareness necessary for English language learners to prepare for college level technical programs. Beginning writing and grammar as well as study skills will be emphasized. New students, prior to registration contact 920-735-2443 or learnenglish@fvtc.edu for an assessment to determine your proficiency in English.

Course Descriptions

863 - Intensive English Teaching English as a Second or Foreign

10863180 English Language Learning Theories (3 cr.)

Develops competence of language learning theories. Students are introduced to the history of English as well as being exposed to world English education. The course provides activities to help students develop a foundation of theories and teaching styles. In addition, the course explores classroom management techniques and various learning environments. New students, prior to registration contact 920.996.2832 or brian.skelton8702@fvtc.edu for an assessment to determine your proficiency in English.

10863181 English Language Learning Methods (3 cr.)

Develops competence of language learning methodology. This course examines a variety of educational technologies and resources that will bolster learning in student-centered classrooms. Through interactive lessons and activities, students explore successful instructional methods to effectively teach grammar, vocabulary, pronunciation, speaking, listening, reading, and writing as separate or integrated skills. New students, prior to registration contact 920.996.2832 or brian.skelton8702@fvtc.edu for an assessment to determine your proficiency in English. Coreq: English Learning Theories 10861180

10863182 English Learning Practicum (3 cr.)

Develops competence of language learning instruction. During the practicum, students observe professional instruction in environments such as Intensive English Programs, Adult Education, and Bridge courses. The course also provides a practicum of supervised instruction as well as a private mentorship which culminates into a portfolio containing lesson plans and feedback. New students, prior to registration contact 920.996.2832 or brian.skelton8702@fvtc.edu for an assessment to determine your proficiency in English. Coreq: English Learning Methods

890 - General General Studies Transfer (UW-Green Bay)

10801136 English Composition 1 (3 cr.)

Learners develop and apply skills in all aspects of the writing process. Through a variety of learning activities and written documents, learners employ rhetorical strategies, plan, organize and revise content, apply critical reading strategies, locate and evaluate information, integrate and document sources, and apply standardized English language conventions.

Course Descriptions

10806112 Principles of Sustainability (3 cr.) Prepares the student to develop sustainable literacy, analyze the interconnections among the physical and biological sciences and environmental systems, summarize the effects of sustainability on health and well-being, analyze connections among social, economic, and environmental systems, employ energy conservation strategies to reduce the use of fossil fuels, investigate alternative energy options, evaluate options to current waste disposal and recycling in the U.S., and analyze approaches used by your community to promote and implement sustainability.

10809166 Intro to Ethics: Theory & App (3 cr.) This course provides a basic understanding of the theoretical foundations of ethical thought. Diverse ethical perspectives will be used to analyze and compare relevant issues. Students will critically evaluate individual, social and professional standards of behavior, and apply a systematic decision-making process to these situations.

10809172 Introduction to Diversity Studies (3 cr.) This course introduces the study of diversity from a local to a global perspective using a holistic, interdisciplinary approach that encourages exploration and prepares students to work in a diverse environment. The course introduces basic diversity concepts, examines the impact of bias and power differentials among groups, explores the use of culturally responsive communication strategies, and compares forces that shape diversity in an international context.

890 - General General Studies Transfer (UW-Oshkosh)

10801195 Written Communication (3 cr.) Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.

890 - General Work Readiness

10890100 College Success: On Course (1 cr.) On Course helps you learn a number of proven strategies for creating greater academic, professional and personal success. You will discover how to create a rich, fulfilling life by developing new beliefs and behaviors. College Success: On Course empowers you to make wise choices in your academic and personal life which leads to improved experiences and outcomes.

Course Descriptions

10890103 Employability Strategies (1 cr.)	Designed to ease the student's transition from school to the world of work. The strategies of getting a job and the interpersonal skills needed in keeping it are emphasized. Topics include the job search, employment correspondence, application for employment and job interviewing. These topics are enhanced by mock interviews, individualized job search planning and employment advising, and presentations from human resource personnel.
31801320 Essential Workplace Communication (3 cr.)	Provides fundamental communication skills required in the workplace including telephone, email and social media etiquette; listening; asking questions; clarifying; providing information; interpreting non-verbal cues; and understanding interpersonal conversations.
31804310 Essential Workplace Math (3 cr.)	Prepares learner to engage in financial transactions including comparing costs and making change, calculate percentages, and create and use budgets.
31809300 Human Relations (2 cr.)	Explores practical applications of issues in psychology and human behavior that affect a person's daily life. The objective is to enhance the student's quality of life by developing an awareness of the connection between his/her personal life and work life. This course is intended for technical diploma students.
31809304 Workplace Diversity (2 cr.)	Develops basic skills needed to work with diverse groups of people in the workplace.
31890308 Workplace Organization (2 cr.)	Provides an overview of skills and behaviors needed in a variety of workplace settings including filing, scheduling, creating and maintaining an effective and efficient work space.
31890309 Personal Leadership (2 cr.)	Student will develop skills in personal planning; goal-setting, prioritizing, time management and self-advocacy.