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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ACC100</td>
<td>Financial Accounting 1</td>
<td>4</td>
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<tr>
<td></td>
<td>This course introduces the basic principles and procedures of accounting. Emphasis is placed on analyzing business transactions, cataloging, journal entries, posting to the general ledger, and preparing financial statements (income statement, owner’s equity statement, and balance sheet).</td>
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<tr>
<td>ACC105</td>
<td>Federal Taxes</td>
<td>4</td>
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<td>In this course, students will learn basic individual and business tax law. Emphasis will be placed on research, tax law and tax form preparation for individuals, corporations, and partnerships.</td>
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<tr>
<td>ACC110</td>
<td>Financial Accounting 2</td>
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<td>In this course, students will examine additional accounting concepts as they relate to sales and purchase transactions, merchandise inventory valuation, and various depreciation methods including methods for asset disposition. Topics include accounts receivable, subsidiary ledgers, adjustments for merchandise inventory, depreciation, accruals, deferrals and Generally Accepted Accounting Principles.</td>
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<tr>
<td>ACC120</td>
<td>Intermediate Accounting 1</td>
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<td>This course begins a comprehensive study of corporate accounting and focuses on the statement of cash flows, financial disclosure, and profitability analysis. Students prepare financial statements, complete balance sheets, formulate income statements, and analyze transactions and journals. Prerequisite: ACC110.</td>
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<tr>
<td>ACC200</td>
<td>Intermediate Accounting 2</td>
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<td>This course is a continuation of ACC120 Intermediate Accounting 1 and provides an in-depth study of a corporation’s economic resources. Students focus on cash and receivables, inventory measurement and issues, and the acquisition, utilization, and disposition of operational assets. Prerequisite: ACC120.</td>
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<tr>
<td>ACC210</td>
<td>Intermediate Accounting 3</td>
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<td>This course is a continuation of ACC200, Intermediate Accounting 2, and focuses on accounting for investments which include held to maturity, trading securities, securities available for sale, the equity method and a brief lecture on consolidation. Additional topics covered include current liabilities, contingencies, treasury stock and retirement of stock. Prerequisite: ACC200.</td>
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<tr>
<td>ACC215</td>
<td>Government and Non-Profit Accounting</td>
<td>4</td>
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<td>This course is designed to introduce the student to some aspects of accounting and control in government units and other non-profit organizations. The students will study the basic accounting concepts and practices used in governmental and non-profit agencies and gain a thorough understanding of the financial activities of non-profit and governmental agencies, budgetary accounting, and reporting procedures. Prerequisites: ACC100 and ACC110.</td>
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<tr>
<td>ACC230</td>
<td>Accounting Information Systems</td>
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<td>This course provides the students with hands-on experience in applying fundamental accounting principles within a computerized environment. Using computer technology, students gain experience setting up and maintaining accounts, recording transactions in the general and special journals, preparing payroll, completing the accounting cycle, and setting up accounting records for new companies.</td>
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<tr>
<td>BUS100</td>
<td>Introduction to Business</td>
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<td></td>
<td>This course provides a thorough survey of major business functions, focusing on modern business procedures. Topics include international business, economics, management, marketing, accounting, social responsibility and ethics, innovation, and entrepreneurship.</td>
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<tr>
<td>BUS106</td>
<td>Computer Applications</td>
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<td>This course provides the student with an introduction to multiple office-based applications. The student will use the knowledge gained in this course as a foundation for implementing and developing projects in various applications including spreadsheets, word processing, presentation software, and the PTI network.</td>
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<tr>
<td>BUS109</td>
<td>Spreadsheet Applications</td>
<td>3</td>
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This course guides students with little spreadsheet experience and enables them to become knowledgeable, confident spreadsheet designers and users. The course utilizes hands-on examples, tutorials, and reinforcement to develop spreadsheet design in a wide variety of disciplines, including marketing, accounting, finance, and operations.

**BUS110 Principles of Management** 4 Credits

This course provides an overview of the major functions of operational and human resources management. Upon completion of this course, the students should be able to integrate behavioral and systems approaches with traditional analysis and demonstrate Total Quality Management and Continuous Quality Improvement methods in the management process.

**BUS120 Business Law** 4 Credits

This course provides students with detailed knowledge of the laws relating to contracts, commerce, property, business crimes, torts, and employment. Students develop an awareness of business situations requiring legal counsel and a familiarization with the overall structure of our legal system.

**BUS200 International Business** 4 Credits

The study of international business concepts is designed to better prepare students to master the aspects of worldwide business functions. The course covers international trade, the international monetary system, and their relationship to business. Students also evaluate countries as potential sites for business operations.

**BUS220 Human Resource Management** 4 Credits

This is an introduction to the principles, policies and procedures of personnel management. The course focuses on the acquisition, training, and maintenance of human resources for organizations. Topics include legal principles for human resource managers, salary and benefits, workplace diversity, equal employment opportunity, recruitment and selection, orientation/training, appraisal of performance, and discipline.

**BUS232 Database Applications for Business** 3 Credits

This course introduces students to the design and use of databases for business applications. Using database computer software, students will plan and develop a variety of databases for business. Topics covered include database planning, creation of records, searching for data using database queries, development of forms for data entry, and report design.

**BUS240 Small Business Management** 4 Credits

This course introduces the challenges of entrepreneurship including the start-up and operations of a small business. Topics include types of small business ownership (including franchising and home-based business), financing alternatives, and issues of a small business (including personnel, marketing, site location, and managerial decision-making). Upon completion, students should be able to develop a business plan tailored to a small business.

**CAD101 Drafting 1** 4 Credits

This course is an overview of the practices and techniques utilized within the drafting industry. Topics include: oblique, perspective, isometric and orthographic sketching, sectioning, dimensioning practices and basic print reading.

**CAD106 MicroStation** 4 Credits

This course is an introduction to the unique language, command methods and application of the MicroStation software. Topics included: display methods, view manipulation, drawing techniques, construction methods, manipulation methods, editing methods, dimensioning practices, and plotting techniques specific to this software. A 70% grade must be attained at this level to continue into CAD related courses.

**CAD111 AutoCAD** 4 Credits

This course is an introduction to the unique language, command methods and application of the AutoCAD software. Topics included: display methods, view manipulation, drawing techniques, construction methods, manipulation methods, editing methods, dimensioning practices, and plotting techniques specific to this software. A 70% grade must be attained at this level to continue into CAD related courses.

**CAD132 Architectural Drafting 1** 4 Credits

This course is an introduction to the principles of architectural drafting and building materials as they apply to residential structures. Students will apply proper drafting standards and construction material knowledge to create architectural floor plans, elevations, building sections, wall sections, details, and schedules. A 70% grade must be attained at this level if continuing into Architectural Concentration. Prerequisites: CAD106 and CAD111.

**CAD133 Mechanical Drafting 1** 4 Credits
This course is an overview of the mechanical industry. Topics include terminology, print reading, geometric construction methods, drawing layouts, precision measurement, basic threads, basic assemblies, dimensioning techniques as they apply to the mechanical industries. A 70% grade must be attained at this level if continuing into the Mechanical Concentration. **Prerequisites: CAD106 and CAD111.**

**CAD134 Architectural Drafting 2**

This course is an introduction to the principles of architectural drafting and building materials as they apply to commercial structures. Students will apply proper drafting standards and construction material knowledge to create architectural floor plans, elevations, building sections, wall sections, details and schedules. **Prerequisites: CAD132.**

**CAD138 Mechanical Drafting 2**

This course is a continuation to the practices of drafting as applied to the mechanical industry. Advanced topics learned in CAD133 as well as gears, fasteners, manufacturing techniques and practices; finish marks advanced dimensioning techniques, tolerancing methods and the utilization of Machinery’s Handbook. A 70% grade must be attained at this level to continue into CAD139. **Prerequisites: CAD133.**

**CAD139 Mechanical Drafting 3**

This course will continue the practices of the mechanical industry by introducing the student to material properties, weldment drawings, cams and jigs and fixtures to create documentation and drawings used in the industry. **Prerequisites: CAD138.**

**CAD147 Commercial Wiring Systems**

This course will introduce to drafting practices and techniques needed to create commercial wiring systems drawings. Topics include electrical lighting and power plans, data control systems, communication systems, block diagrams, and construction documentation. **Prerequisites: CAD106 and CAD111.**

**CAD152 Industrial Pipe Drafting**

This course is an introduction to the principals of pipe drafting as applied to commercial and industrial structures. Topics include material and connection types, creation of commonly used pipe drawings, selection of drafting symbols and pipe and instrumentation diagrams, methods, and techniques. **Prerequisites: CAD106 and CAD111.**

**CAD158 Building Systems**

This course is an introduction to the principles of the mechanical systems used within a building. Students will learn symbology and standard drafting practices as applied to HVAC and fire protection drawings as they apply to commercial building projects. **Prerequisites: CAD106 and CAD111.**

**CAD201 Civil/Topographical Drafting**

This course is an introduction to the principals and practices specific to the civil and topographical drafting industries. Students will learn proper drawing methods as they relate to residential and commercial structures. Topics include: site planning and preparation, surveying methods, legal descriptions, contouring and the basics of landscaping. **Prerequisites: CAD106 and CAD111.**

**CAD203 Energy Technology**

This course will introduce the student to different types of energy such as renewable energies and fossil energies. Topics to include the extraction, conversion, transportation, storage and use of energy as it relates to the energy fields. **Prerequisites: CAD133.**

**CAD206 Civil Application Software**

This course introduces the student to the software InRoads. Students learn how this database driven software manipulates data specific to the creation of civil related drawings and construction documents. **Prerequisites: CAD106.**

**CAD210 Statics & Strengths of Materials**

This course is an introduction to principals of mechanics of structures as they relate to the engineering industries. Topics include the calculation of: stress and strain of material, static equilibrium, support reactions, beam analysis, design properties and the affect of materials on a structure. **Prerequisites GMG200.**

**CAD217 Structural Drafting**

This course is an introduction to principals and practices specific to the structural drafting industries. Students will learn proper drawing methods as they relate to commercial structures. Topics include steel frame construction, beam and column connection detailing and fabrication drawings. **Prerequisites: CAD106 and CAD111.**
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<th>Course Code</th>
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<tbody>
<tr>
<td>CAD218</td>
<td>Structural Application Software</td>
<td>3</td>
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<td></td>
<td>This course introduces students to Revit Structural Software. Students learn advanced modeling techniques to create commercial construction documents extracted and annotated directly from object-based 3-dimensional structural models. Prerequisite: CAD111.</td>
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<tr>
<td>CAD221</td>
<td>Architectural Application Software 1</td>
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<td>This course introduces students to the software Revit Architecture. Students will learn to navigate the building information software's project browser and create 3-dimensional commercial buildings and the corresponding construction documents as they apply to commercial drafting industry. A 70% grade must be attained at this level to continue into CAD236. Prerequisite: CAD111.</td>
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<tr>
<td>CAD226</td>
<td>Mechanical Application Software 1</td>
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<td>This course introduces students to the software Pro Engineer. Students will be introduced to modeling tools, modification commands, the interface and advanced techniques to create 3-dimensional parametric models and mechanical documents. A 70% grade must be attained at this level to continue into CAD251. Prerequisite: CAD133.</td>
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<tr>
<td>CAD234</td>
<td>Architectural Application Software 2</td>
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<td>This course is a continuation of CAD221 Architectural Application Software 1. Students will be introduced to Revit MEP and continue to refine the standards and practices learned in CAD221. The focus of this course will be placed on the HVAC, Plumbing, Electrical, and Fire Protection features that the student will apply to the commercial drafting industry. A 70% grade must be attained at this level to continue into CAD236. Prerequisite: CAD221.</td>
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<td>CAD236</td>
<td>Architectural Capstone</td>
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<td>Participation in this course requires the completion of a capstone project that integrates the student’s knowledge and skills acquired during the completion of architectural concentration curriculum. Students will learn current design practices to incorporate sustainability and energy efficiency into their final project. Prerequisites: CAD134 and CAD234.</td>
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<tr>
<td>CAD251</td>
<td>Mechanical Application Software 2</td>
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<td>This course is a continuation of CAD226. Students will use modify the interface and use advanced techniques such as: sweeps, blends, helical seeps, cuts, family tables and parameters to create complex models, detail drawings and assembly drawings. Prerequisite: CAD226.</td>
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<tr>
<td>CAD253</td>
<td>Mechanical Applications 3</td>
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<td>This course introduces students to the software called SolidWorks. Students use advanced techniques to create 3-dimensional parametric models, assemblies and construction documents as they relate to industry standards. Prerequisite: CAD133.</td>
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<tr>
<td>CAD254</td>
<td>Geometric Tolerancing</td>
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<td>This course introduces the student to the fundamentals of geometric dimensioning and tolerancing. Topics include form control, datums, orientation control, location control, profile control and runout control as it relates to the mechanical industry. Prerequisite: CAD133.</td>
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<tr>
<td>CAD256</td>
<td>Mechanical Capstone</td>
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<td>Students will be introduced to the workings of different types of motors and engines. This course integrates a group project utilizing the student’s knowledge and skills acquired during the completion of the mechanical concentration. Prerequisites: CAD139 and CAD251.</td>
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<tr>
<td>CST035</td>
<td>A+ Service Technician</td>
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<td>A+ Service Technician is a 132-hour course that covers material found on the Comptia A+ certification test. This course provides students with the hands-on experience and skill development needed to perform the hardware-associated tasks of installation, service, and support of microcomputers. Students also gain the hands-on experience in the software-associated tasks of installation, service, and support on microcomputers. Students are given a solid, practical understanding of PC configuration, troubleshooting, and repair. Students are given instruction and self-study materials that assist them in preparing for the COMPTIA A+ certification examination.</td>
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<tr>
<td>CUL100</td>
<td>Introduction to Culinary Arts</td>
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<td></td>
<td>This course introduces students to the world of culinary arts. Students will learn the fundamentals of cooking, food preparation, and food service. Prerequisite: None.</td>
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In this introductory course, students get their first hands-on experience in a professional kitchen. Topics include the fine art of sauce making (stocks, glazes, essences and all major soup categories), proper techniques for preparing salads, dressings and garnishes, and the principles of vegetable, starch and breakfast cookery. As they practice fundamental cooking techniques, students acquire basic knife skills and have an opportunity to prepare breakfast and mid-day meal classics. Throughout the course, strong emphasis is placed on safety, creativity and plate presentation.

**CUL110 Fundamental Concepts of Cooking, Sanitation and Safety**  
5 Credits

This course introduces the student to the underlying principles of the culinary arts profession. Students will become familiar with culinary terminology, industry standards, high-end kitchen equipment, and the many varieties of fruits, vegetables and herbs at their disposal. The hierarchy of the professional kitchen is discussed, including various staff member roles and responsibilities. Students are also exposed to the complex selection, planning and time management procedures involved in daily kitchen operations. A major component of this course focuses on sanitation and safety in a food production environment. After studying the origins of foodborne diseases and preventative measures enforced by regulatory agencies, students learn proper procedures for handling food, cleaning and sanitizing their work area, and safely using and maintaining kitchen equipment. Upon successful completion of this course, students are certified in sanitation procedures by the American Culinary Federation.

**CUL120 Effective Kitchen Design Principles**  
2 Credits

The course outlines the best practices for designing a safe and effective professional kitchen, based on functional relationships, equipment space, and operating efficiencies. Students then get an opportunity to apply these principles to the design of their own mock kitchen.

**CUL130 Introduction to Fish/Shellfish and Meats**  
8 Credits

In this course, students learn the intricacies of round/flat fish and shellfish fabrication, preparation, and garnishing. Emphasis is placed on knife skills, yield results and proper storage for various types of fish. A sister unit covers the fabrication, preparation and garnishing of red meats, poultry, and game. Students become knowledgeable in muscle and bone structure of various meats, proper knife selection, and butchery equipment. Through lectures, demonstrations and hands-on activities, students gain experience in the preferred methods for cooking meats and fish, with emphasis on portion control, creativity and plate presentation. As a follow-up to earlier sanitation training, students learn the special requirements associated with handling and storing meats and fish.

**CUL140 Purchasing and Cost Control**  
2 Credits

This course exposes students to the process of planning, purchasing and controlling supplies in a food service environment, with the ultimate goal of cost containment. Students gain practical experience in the entire purchasing cycle, from supplier selection, forecasting, price negotiation and ordering, to inventory, storage and disbursement of food and kitchen supplies.

**CUL150 Culinary Elements of Wines and Spirits**  
2 Credits

Students gain an understanding of the important role of wines and spirits in the professional kitchen. They learn to differentiate between the chief wine regions of Europe and America and how to match specific wines to specific foods. In addition to hands-on practice in incorporating a wide variety of wines and alcohol into classic entrees and desserts, students gain exposure to proper techniques for wine tasting, bottle reading and front-of-the-house wine service.

**CUL160 Baking and Pastry Fundamentals**  
8 Credits

In this course, students learn the unique principles and chemistry involved in professional baking. They become versed in baking terminology, equipment, ingredients, weights and measures, and formula conversions. Special baking and design techniques are used to prepare a variety of baked goods and pastries, including basic breads, quick breads, cookies, pies and tarts, creams and mousses, cakes and frostings, and pate a choux, crepes and phyllo doughs. Students also learn the delicate technique for tempering chocolate and its use in soufflés and other classic pastries. The preparation and storage of ice creams and sorbets will also be covered. Specific sanitation requirements for the bakeshop are emphasized throughout the course.

**CUL170 Nutrition and Menu Planning**  
4 Credits

This course introduces students to fundamental nutrition principles and how to apply these concepts to the planning of healthy, yet appealing, menus. Topics include basic nutrients, label reading, and recipe analysis. Students will be familiarized with special dietary needs and how to skillfully adapt menus to address these restrictions. As a final project, students apply course principles to the design of a cycle menu.

**CUL180 Fundamentals of Classical Cuisine/Garde Manger**  
7 Credits

The goal of this advanced course is to build upon the students’ solid foundation in culinary arts by delving into classical French, Italian and Spanish cuisine. In addition to studying specific terminology, cooking techniques and presentations associated with each classical style, students gain an appreciation for the history and global influence of each cuisine type. This course also explores the organization, responsibilities, and equipment of the cold kitchen. Students get hands-on experience preparing simple platter layouts, cold hors d’oeuvres, and advanced salads in classical forms for receptions and buffets. Training includes exposure to tools for sausage making, grinding and smoking. Proper sanitation procedures are reinforced throughout the course.
CUL200  Advanced Intercontinental Cuisine 7 Credits

In this higher-level course, the students' previous training in classical European cuisine is complemented by an exploration of selected global cuisines of Asia, Middle East, Latin America and Germany. Emphasis is placed on gaining familiarity with the history, culture, indigenous ingredients, and food presentations of each region. Students have an opportunity to prepare, taste and evaluate dishes from these regions using traditional and contemporary cooking techniques and ultimately put their skills and creativity to the test in high-end culinary competitions. Kitchen sanitation requirements are emphasized throughout the course.

CUL210  Advanced Cooking and Pastry 7 Credits

In this capstone course, students get the chance to apply their full range of culinary skills to the design and preparation of a full menu, complete with appetizer, fish course, entree, salad and dessert. The focus is on contemporary American cuisines and the hottest culinary trends sweeping the nation. Students participate in a series of other industry-based projects, including confection design, shadowing a practicing chef in industry, and creating original recipes.

ELT101  Math for Electronics 4 Credits

This course provides students with math skills necessary to solve problems in electricity and electronics. It consists of a review of arithmetic, algebra, equations, right triangle solutions and complex numbers.

ELT115  Electricity 7 Credits

Electricity and electronic systems are explored through the study of DC and AC fundamentals. Practical experience in parallel and series circuit analysis is gained by means of electronic bench test equipment and troubleshooting.

ELT125  Electronics 1 7 Credits

This course is an introduction to transformers, diodes, rectifiers, filters, and regulators. Semiconductor fundamentals are presented and learners master competencies in constructing, measuring, troubleshooting and analyzing filter and basic semiconductor circuits. 

ELT126  Structured Wiring 4 Credits

The course introduces students to low voltage cable wiring technology. It includes the design, construction, maintenance and interconnection of intelligent control systems.

ELT135  Electronics 2 7 Credits

This is a course to expand the competencies of semiconductor concepts. FET, Operational amplifier and BJT circuits are explored as they apply to real world electronic systems. Students construct, analyze, and troubleshoot complete switching and amplifier circuits. 

ELT145  Digital Electronics 7 Credits

This course introduces students to logic gates, flip-flops, counters, registers, and code converters. Students gain practical experience by constructing, testing and troubleshooting digital circuits and systems.

ELT146  Computer & Network Systems 4 Credits

Students tear down and reassemble a personal computer, install the operating system, set up wired and wireless networks, and configure IP devices.

ELT254  Communication Systems 7 Credits

Students survey all fundamental aspects of modern electronic communication and telecommunications. Basic concepts in AM, FM, TV, RF, telephone, pulse encoding, and fiber optics are covered and applied to contemporary wired and wireless systems.

ELT258  Electronics Devices and Systems 3 Credits

Students review all critical concepts and measurement techniques through analysis and troubleshooting of a variety of electronic systems.

ELT266  Control System Electronics 7 Credits

This course introduces students to industrial automation and control methods. Hardware includes Programmable Logic Controllers, industrial sensors, conveyor systems and robotics. Theoretical concepts are reinforced through group-based Design Challenges.
ELT267 Microcontrollers

Students are introduced to programming the BASIC Stamp Microcontroller. The program techniques control LEDs, switches and robotic motion and are reinforced through individual Design Challenges. Prerequisite: ELT145.

GDA115 Design 1

This course focuses on the fundamentals of the visual design elements of line, shape, and color, with the emphasis on creative thinking and problem solving using various techniques and methods. A 70% grade must be attained at this level to continue into GDA256 Design 2.

GDA116 Drawing Fundamentals

This course introduces the foundation of drawing through the five elements of art (line, space, value, form, and texture). A series of activities will focus on visual demonstrations of gesture drawing, form, perspective, and developing concepts through visual representations of imagery and typography.

GDA126 Color Theory and Techniques

This course introduces the basic principles of harmony and contrast. Fundamental theories pertaining to color perception and design are introduced and practiced. The student’s skills with color design and communication are developed and refined through project creation and critique. Areas of focus in this course include color theories, models, digital production, traditional techniques and print.

GDA127 Digital Imaging

This course utilizes techniques associated with designing computer graphics and page make-up for desktop publishing. Emphasis is on the exploration of illustration, photo retouching and manipulation, working toward finished results primarily for print and Web.

GDA128 Typography

This course focuses on the fundamentals of typography and introduces the students to aspects of type for display and text design. Students become familiar with the categories of type and a variety of font families. They also become proficient at choosing fonts to match a specific message.

GDA129 Computer Illustration

In this course students use the computer as a drawing tool. Students will become aware of the industry markets of cartooning, technical illustration, and typography and how these can work in different designs and page layouts. A 70% grade must be attained at this level to continue into Graphic Design related courses.

GDA136 Photography

This course provides an introduction to the concepts, techniques, procedures, and application of photography. Students will use cameras in studio and field conditions to capture images to meet the requirements of assignments designed to develop specific skills and competencies. Emphasis is placed on basic compositional rules, common features of a DSLR camera with appropriate lenses, lighting, and exposure.

GDA137 Web Design 1

This course introduces the processes of designing web pages for publishing on the World Wide Web. Students learn to apply their visual design skills within the constraints and limits specific to this medium. Students gain an understanding of the Internet environment and the process of website design and development. Students learn basic HTML programming, image creation, and page layout with graphics and web design applications. A 70% grade must be attained at this level to continue into GDA255 Web Design 2.

GDA138 Computerized Page Make-Up

This course focuses on the capabilities of the Macintosh computer as a working tool in producing graphic art. The emphasis will be on using the computer and software as design tools and learning to merge text and graphics to create ads, newsletters, and logos for desktop publishing.

GDA139 Advanced Digital Imaging/Production

This course focuses on advanced image manipulation and editing techniques. Industry standards are explored for print and web production. Students develop the skills necessary to create original images and artwork.

GDA142 Advertising Processes
This course examines the creative side of advertising, through foundation theories and practical applications. Students are challenged to closely observe and understand advertising in today’s market.

**GDA143 Production** 3 Credits

This course introduces the principles and methods needed to prepare traditional and electronic artwork. Specific areas of study include art rescaling, photo cropping, color separation, digital photography, file management, and a basic introduction to electronic separations and printing.

**GDA200 Portfolio Development 1** 4 Credits

This course focuses on advanced layout and design skills. The student explores more complex visual communication theories, and apply them to a variety of appropriate media. Creative problem solving and presentation skills are reinforced using reliable design principles and skillful digital and conventional methods. Prerequisite: A 70% grade must be attained at this level to continue into GDA203 Portfolio 2

**GDA201 Corporate Design** 3 Credits

This course examines corporate identity programs and the use of trademarks and logos from concept to presentation. Emphasis is on the use of type and design and how it is applied in the corporate environment.

**GDA202 Graphic Design Senior Project** 4 Credits

In this course, students create a comprehensive and original campaign to complete their portfolio. This submission is fully researched, proposed, designed, and produced by the individual student, down to planning and incorporating their own photographs and support elements. As an individualized assignment, students are encouraged to explore concepts and processes that advance their current design skills using print, web and interactive media.

**GDA203 Portfolio Development 2** 4 Credits

This course will enable students to further develop their portfolio and presentation skills for potential employers. Students will also develop an electronic portfolio using industry preferred software to demonstrate their familiarity and proficiency with the computer. Prerequisite: GDA201.

**GDA204 Multi-Page Documents** 3 Credits

This course highlights the study, examination and use of typography when creating page layouts and how to prepare and design multiple-page documents. The students develop skills in a computer page layout program to prepare for the industry's need for competence in magazine, booklet, brochure and catalog design.

**GDA205 Entrepreneurship** 4 Credits

This course provides a thorough survey of business practices from a creative professional perspective. Topics include contracts, invoicing, copyrights, freelancing, client relations, operations, management, proposals, and accounting.

**GDA255 Web Design 2** 3 Credits

This advanced course builds on the students' basic Web authoring skills by focusing on the demands, details, and subtleties of creating web pages. The processes of graphic and multimedia creation, adding interactivity, color use, file management and formats, testing, publishing and publicizing are addressed. Students introduce interactivity and multimedia elements to enhance their personal sites, and design and develop a commercial website. Prerequisite: GDA137.

**GDA256 Design 2** 3 Credits

This course will assist students in developing a variety of approaches to effective visual communication using elements of design, photography and a wide range of creative processes. Students will use suitable design principles for a project directed at a specific target audience. Prerequisite: GDA115.

**GEE099 Principles of Writing** 0 Credits

This class focuses on fundamental writing elements needed to succeed in college level courses. Mastery of sentence structure, grammar and usage, punctuation, and mechanics will be emphasized with a focus on improvement of basic writing skills at both the sentence and paragraph levels. This class is graded as a pass/fail course. Students placed in GEE099 must pass this course concurrently with GEE100 before proceeding to GEE150.

**GEE100 English Composition 1** 4 Credits

This writing course focuses on the writing of descriptive narrative, cause and effect, and process essays from the initial stage of prewriting to final revisions and editing. Topics included are purpose, audience, development, focus and organization, as well as
word usage and sentence structure. Elements of grammar, spelling, and punctuation are reviewed. Assigned readings are part of class discussion and writing assignments. Prerequisite: Satisfactory performance on the writing proficiency exam; otherwise, students must have concurrent success with GEE099 and GEE100 before proceeding on to GEE150.

GEE150 English Composition 2 4 Credits

This writing course is a continuation of the fundamentals introduced in GEE100 English Composition 1. Library and electronic research techniques and guidelines are thoroughly covered. Advanced persuasive writing and research-based persuasion are emphasized using citations and works cited according to MLA guidelines. Analytical and critical thinking skills are developed through students’ evaluation of their own writing and assigned readings. Prerequisite: Satisfactory performance on the writing proficiency exam or GEE100.

GEE211 Effective Speech 4 Credits

This course focuses on the various dimensions of effective speaking with emphasis on audience analysis, reasoning, organization, evidence, and delivery. Throughout the course, the student is acquainted with the various types of speeches and their effectiveness through critical and analytical reading, individualized and group exercises and projects, and class discussions. Students deliver a variety of speeches, including informative and persuasive speeches.

GEH120 Art History 4 Credits

This general studies course focuses on the history of art and design. Lessons and projects provide students with approaches to creative thinking, understanding visual communication, and discovering meaning through discussion and research. Lectures and other activities are designed to enhance the student’s understanding of the relationship between historical developments and artistic production.

GEH121 History of Technology 4 Credits

This general studies course exposes students to the evolution of technology and its impact on society. The course will emphasize the overall impact of major technological innovations and inventions that fundamentally altered the world as well as look at some of the great thinkers that helped advance technologies throughout history.

GEM095 Supplementary Mathematics 0 Credits

This course, taken during the same quarter as GEM100 Principles of Mathematics, focuses on providing students with supplementary instruction in the topics covered in GEM100 Principles of Mathematics: whole numbers, fractions, decimals, percentages, ratios, measurement (both English and Metric systems), and an introduction to Algebra. This course is graded as a pass/fail course. Instructional delivery will be given in both a traditional classroom as well as an instructional computer lab for the utilization of learning software. Students are placed in GEM095 Supplementary Mathematics based on their placement testing scores and must pass this course concurrently with GEM100 Principles of Mathematics.

GEM100 Principles of Mathematics 4 credits

This general studies course involves a review of the principles of mathematics. Topics to be discussed include whole numbers, fractions, decimals, percentages, ratios, measurement (both English and Metric systems), and an introduction to Algebra. For programs that require additional mathematics classes, students must earn a “C” or better grade in this course to advance to the next required math course.

GEM125 Personal Finance 4 credits

This course blends financial theory with financial applications while providing an understanding of the U.S. financial structure. Emphasis is placed on budgeting, personal income and expenditures, present and future value calculations, personal financial statements, and finance and credit alternatives.

GEM150 Algebra 4 Credits

This general studies course involves various algebraic operations including signed numbers, evaluating expressions, simplifying and solving algebraic equations, factoring, functions and their graphs, and word problems relative to the respective fields. Prerequisite: Satisfactory performance on the mathematics proficiency examination or GEM100.

GEM170 Physical Science 4 Credits

This General Education course surveys the foundational concepts behind classical physics, exploring basic principles of mechanics, thermodynamics, waves, and optics. This course is intended for programs that require little or no science background. Prerequisite: GEM100 or satisfactory score on ACCUPLACER placement test.

GEM175 Physics 4 Credits

This course provides an introductory study of the principles and laws of physics as applied to mechanics, hydraulics, pneumatics, heat, sound, and optics. Prerequisite: GEM150.
GEM200 Trigonometry 4 Credits
This general studies course involves the use of applied trigonometric functions. Topics include concepts of geometry, Pythagorean Theorem, trigonometric identities relative to right triangles, the law of sine and cosine, logarithmic functions, and an introduction to vectors. Prerequisite: GEM150.

GES100 Psychology 4 Credits
This course introduces the student to basic psychological principles. Topics include neuroscience and behavior, states of consciousness, learning, development, personality, health psychology, psychological disorders, and social psychology.

GES105 Child Psychology 4 Credits
This general studies course examines the basic principles and theories of child development from conception to adolescence. The class provides an overview of physical, social, emotional, and intellectual development, as well as covers the genetic and environmental influences on development.

GES130 Ethics 4 Credits
This general studies course focuses on ethical and legal principles and social responsibilities as they relate to everyday challenges. Students explore modes of applying ethical standards to issues such as personal accountability, environmental problems, interpersonal relations, and emerging social systems.

GES140 Economics 4 Credits
This course provides a survey of core economic concepts. Students are exposed to the ideas needed for a basic understanding of macro and micro economic principles.

GES150 Critical Thinking 4 Credits
In today's information age, critical thinking skills are vital for success. This course utilizes case studies to teach reasoning, analysis, and evaluation skills in everyday situations. Students learn the importance and benefits of critical and creative thinking, work through steps to understand, analyze, and evaluate specifics of argument and persuasion, and practice solving problems using critical thinking skills.

GES175 Social Problems 4 Credits
This course involves analysis of major social problems confronting American society with special emphasis on critical thinking abilities in evaluating causes, effects, and various approaches in dealing with social problems. Discussion includes such topics as mental illness, crime, juvenile delinquency, race relations, pollution, population, urbanization and influences detrimental to family stability: divorce, alcoholism, gambling, and drug use.

GES200 Human Relations in Organizations 4 Credits
This general studies course focuses on effective human relations in organizations. Specific areas of study include work relationships, ethical choices, team building, conflict management strategies, diversity in the workplace, and work-related stress.

GES225 Cultural Diversity 4 Credits
This course encourages understanding and appreciation among people of divergent backgrounds, cultures, and nationalities. Topics covered include technological changes, travel, political systems, immigration, and religious beliefs that have created a world in which people from different cultures increasingly interact. The course will explore similarities and differences through different media such as movies, documentaries, magazine articles, and more.

GES250 Leadership Principles 4 Credits
Students will understand the concepts of leadership and supervisory roles, planning, decision-making, performance management, strategic management, team building, group and organizational dynamics, and functions in an organization. This class teaches how to be an effective leader in a dynamic, diverse, and continuously evolving business environment. Concepts of goal-setting, motivation, time management, and other interpersonal skills are taught. Students will become familiar with successful leadership practices through case studies and research practices.

GOE140 Introduction to the Oil and Gas Industry 4 Credits
An introduction to the industry “from well-head to burner” will familiarize the learner with the terminology, basic geology, drilling concepts, hydraulic fracturing, and gas processing concepts. The three main segments of the industry: upstream, midstream, and downstream operations will be overviewed. The students will be introduced to the various industry organizations such as the
American Petroleum Institute (API), American Gas Association (AGA) and how they play a role in the industry. Fundamental chemistry, physics, measuring units, and mathematical concepts for the industry will be explored.

GOE250 Industrial Communications 4 Credits
This course covers the realms of industrial automation communication techniques. Wired communication methods such as: RS485, RS232, HART, Ethernet, and Field Bus communication protocols will be examined. The student will learn about wireless networks, cellular technologies, and satellite communication systems. Pre requisites: ELT145

GOE260 Oil and Gas Control Technology 7 Credits
Process instrumentation theory, instrumentation calibration, and the operation of microprocessor-based controllers will be studied utilizing high-tech single and multivariable process control training systems. The four major process control variables: temperature, pressure, flow, and level will be setup as individual control loops. Closed-loop proportional control system tuning, and troubleshooting exercises are an integral part of this unique hands-on learning experience. Prerequisites: ELT266 and GOE250

GOE261 Advanced Controllers 2 Credits
Setup, programming, and establishing communications for advanced Programmable Automation Controllers are the core subjects of study in this course. Discrete and analog input/output operations, zero and span calibration concepts, 4-20 milliamp loop checking, and system diagnostics/troubleshooting complete this study of controller operations. In addition to controllers; this course also includes setup, operation, calibration, and maintenance of a process gas chromatograph. Prerequisites: ELT266 and GOE250

GOE270 Oil and Gas Technology Capstone Project 8 Credits
The combination of all control system technology will be applied in the study of advanced controlled concepts. The addition of integral and derivative control will be applied to basics of proportional control in a team project that combines multiple process variables to a control loop. The complex application of a compressible process fluid will be examined via a unique airflow control system. Prerequisites: GOE260 and GOE261

GOE271 OSHA 10 Safety Certification 1 Credit
The 10 hour General Industry Safety Certification is intended to provide an entry level worker’s general awareness on recognizing and preventing hazards in a general industry setting. Upon successful completion of the course, participants will receive an OSHA Campus 10-Hour General Industry Certification Wallet Card.

GSD001 Steps to Career Success 1 1 Credit
The purpose of this course is to acclimate students to the available resources to maintain their focus on achieving career goals. The course is scheduled for all students in the 1st quarter, one hour per week.

GSD002 Steps to Career Success 2 1 Credit
The purpose of this course is to develop an understanding of the nuances of industry. Topics will include industry related organizations, social networking, employer expectations and other professional skills. The course offering will vary by quarter depending on the program offered, one hour per week.

GSD003 Steps to Career Success 3 1 Credit
The purpose of this course is to apply professional skills and become actively involved in industry related activities. The course offering will vary by quarter depending on the program offered, one hour per week.

GSD175 Career Development 2 Credits
The focus of this course is on preparing students for the upcoming job search process. They will produce a series of critical job search documents, including a resume, reference page, cover letter and thank you letter. These documents are applied to job search activities that give students the opportunity to hone their interview skills, research potential employers, complete an online job application, and experience a mock interview scenario.

GSI185 Electronics Internship 6 Credits
The Internship is a cooperative effort between the Institute and the professional community. It is designed to provide the students with an opportunity to apply the knowledge and skills learned in their major in a related working environment.

GSI192 Internship 8 Credits
The Internship is a cooperative effort between the Institute and the professional community. It is designed to provide the students with an opportunity to apply the knowledge and skills learned in their major in a related working environment. This internship requires 240 hours work experience.

**GSI195 Simulated Coding Internship**  
8 Credits  
This simulated in house coding internship offers the student realistic medical coding cases that would be encountered in an actual medical workplace.

**GSI199 Internship**  
12 Credits  
The internship is a cooperative effort between the Institute and the professional community. It is designed to provide the students with an opportunity to apply the knowledge and skills learned in their major in a related working environment. This internship requires 360 hours work experience.

**GSI203 Internship**  
6 Credits  
The student will gain therapeutic massage experience in an actual practice to help implement the knowledge and competencies acquired in previous courses. The unpaid internship experience is supervised by an on-site supervisor in conjunction with the Medical Department Chair. Students may not accept tips or get paid during their internship experience. **Prerequisite: The student is required to successfully complete all courses and requirements in the Therapeutic Massage Program prior to internship placement.**

**GSI206 Internship**  
12 Credits  
The internship is a cooperative effort between the institute and the professional community. The combination of internship work experience and coursework is designed to provide the students with an opportunity to apply the knowledge, skills, and attitudes learned in their major in a related working environment.

**GSI207 Practicum**  
8 Credits  
This course helps students gain practical experience in their field of study that will enhance their skills and integrate knowledge learned in the program. Students will apply theory, concepts, and skills involving specialized interactions within and among different business, hospitality, and criminal justice organizations. Successful completion of this course requires a grade of “C” or better.

**GSI208 Simulated Internship**  
8 Credits  
This in-house internship is designed to provide the students with an opportunity to apply the knowledge and skills learned in their major in an environment that simulates the responsibilities of an actual workplace. This internship requires 240 hours of employment.

**GSI209 Internship**  
9 Credits  
The internship is a cooperative effort between the institute and the professional community. It is designed to provide the students with an opportunity to apply the knowledge and skills learned in their major in a related working environment. This internship requires 256 hours work experience.

**GSI219 Surgical Technology Internship**  
12 Credits  
The 360-hour Internship experience will be conducted in a facility where there is an opportunity to observe, assist, learn, and perform in an on-the-job setting. It is a cooperative effort between the institute and the professional community. It is designed to provide the students with an opportunity to apply the knowledge and skills learned in the classroom and while on their clinical rotation. It must be noted that some internships begin at 6:00 a.m. and none later than 6:45 a.m. Students are responsible for transportation to and from their affiliated site, either via public transportation or their own reliable automobile. The CST examination will be administered at PTI prior to the end of the internship. **Prerequisite: Satisfactory completion of all course requirements.**

**HMA105 Introduction to the Hospitality and Gaming Industry**  
4 Credits  
This course prepares students for careers in the travel and tourism field, along with insight into each department in lodging, food service, and the rapidly expanding gaming industry. The students will study issues and challenges facing hospitality organizations today.

**HMA130 Hospitality Supervision**  
4 Credits  
This course focuses on managing people from the hospitality supervisor's viewpoint. It includes techniques for increasing productivity and controlling labor costs, time management, and managing change. It also stresses effective communication and charts key responsibilities of a supervisor in a lodging or food service operation. Students refine strategies designed to motivate employees and resolve conflicts with staff, guests, and suppliers.

**HMA137 Introduction to Reservations**  
3 Credits
In this course, students will learn how to create travel reservations using the SABRE global distribution system for airline travel. They will also get exposure to making hotel reservations for a guest using a front office simulation. Using the Internet to book reservations will also be discussed.

**HMA140 Hospitality Accounting**  
4 Credits

This course is designed to instruct students in accounting procedures used in hotels, restaurants, and casinos. The students will learn inventory control procedures, cost accounting, and budgeting. In addition, students learn how to read and analyze a profit and loss statement, compute occupancy percentages, and complete a hotel's or casino's daily report.

**HMA200 Front Office Procedures 1**  
4 Credits

This course presents a systematic approach to front-office procedures by detailing the flow of business through a hotel, from the reservation process to check-out and settlement. The course also examines the various elements of effective front-office management, paying particular attention to the planning and evaluation of front-office operations and to human resources management.

**HMA205 Food and Beverage Management 1**  
4 Credits

This course focuses on the application of concepts related to preparation, handling, and serving of food and beverage for restaurant use. Food selection, preparation methods, sanitation, and end usage are highlighted. Labor control and food cost are also addressed.

**HMA215 Club & Restaurant Management**  
4 Credits

The students learn all aspects of effectively managing a restaurant. Topics include development of a marketing plan, restaurant promotion, menu pricing, menu design and cost control. The critical human resource factor of managing a restaurant will also be discussed, including employee selection, training and development, and employee motivation.

**HMA217 Casino Operations Management**  
4 Credits

The gaming industry is one of excitement as well as one of risk and this course explores the environment of the casino and the effect they have on consumers and the competition. Topics discussed will range from staffing and organizational guidelines, to casino marketing and player rating systems. The table games, slots, sports books, and race book areas are examined.

**HMA222 Resort Management**  
3 Credits

This course offers a complete approach to the operation of resort properties. Beginning with historical development, details are presented in planning, development, financial investment management, and marketing that deal with the unique nature of resort business.

**HMA230 Front Office Procedures 2**  
4 Credits

This is a continuation of HMA200 Front Office Procedures 1. This course provides students with basic hotel accounting procedures used in the night audit process and the various resources used by front office managers to attain organizational objectives. These skills are then used in a simulation where students are able to process reservations and registrations, monitor and chart financial transactions, and perform check-out and settlement. Prerequisite: HMA200.

**HMA250 Meeting and Event Planning**  
4 Credits

This course is designed to be a resource and learning tool for today's beginning meeting and event planning professionals. It will define the scope and segmentation of the convention and group business market, while describing marketing and sales strategies to attract markets with specific needs. Checklists and conference journals will be provided, as well as, explanations on the roles and responsibilities for the meeting managers and the meeting coordinators.

**HMA257 Rooms and Facilities Management**  
4 Credits

This course presents a systematic approach to managing housekeeping operations within the specified facility. Planning, staffing, and organizing will be discussed. Technical details used in the rooms and throughout the facility will be covered. As part of the course, the students will tour the facilities of a hotel and/or casino.

**HVA101 Math for HVAC**  
6 Credits

This course will build problem solving skills for mathematical computations needed in the HVAC-R industry. Students will develop skills in ratio proportions, use of formulas, graphs, estimating and billing.

**HVA107 Fundamentals of Electricity**  
5 Credits
This course will provide the student with working knowledge and theory of electrical safety and various types of HVAC-R electrical components used in the HVAC-R industry. A 70% grade must be attained at this level to continue on to HVA127 and HVA131.

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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tr>
<td>HVA117</td>
<td>Welding and Sheet Metal Fabrication</td>
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<td>HVA122</td>
<td>Customer Service and Career Development for HVAC</td>
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<tr>
<td>HVA127</td>
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<td>HVA132</td>
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<td>HVA136</td>
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<td>HVA167</td>
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</table>
This course will prepare the students to take the Industry Competency Exam (ICE), Green Awareness exam, and the North American Technician Excellence exam (NATE®). The successful completion of these certification exams will provide the opportunity for the students to illustrate their knowledge and competency when entering the HVAC-R industry.

**ISC100 Independent Study** 4 Credits

The independent study option provides students the opportunity to work with an instructor on a particular planned topic or creative project not addressable through any other course format. The student and an instructor identify the subject of study; design a strategy for investigation, plot manageable milestones and plan appropriate assessments. Proposals for the Independent Study option must be accepted for supervision by a faculty member and be approved by the Department Chair.

**ITA103 Introduction to Information Technology** 2 Credits

This course provides an introduction to the role and function of computers in business. Topics include the impact of computers on society, ethical issues, application/system software, external/internal hardware, and the Internet.

**ITA112 Desktop Operating Systems** 5 Credits

This course introduces students to a variety of computer operating systems. The course focuses on the installation of operating systems, major components of each of these systems, resource and memory management, and basic operations. Students gain an understanding of each operating system’s advantages, differences, and requirements.

**ITA124 Hardware Technology 1** 3 Credits

This course is designed to provide the comprehensive knowledge and skills necessary to install, maintain, upgrade, and repair computer hardware and software on PC workstations and networked systems. Upon successful completion of this course, students will be able to build and configure microcomputer systems, diagnose system hardware or software problems and perform actions necessary to make corrections. **Prerequisite: ITA103.**

**ITA126 Networking 1** 5 Credits

This course provides the student with the fundamentals of networking concepts and techniques. Topics covered include the theoretical models of networking, topologies, protocols, network design, layout, network implementation and troubleshooting.

**ITA136 Networking 2** 5 Credits

This course is designed to have the student focus on servicing and supporting CISCO routers and switches. Upon completion, student will possess the knowledge, skills and understanding needed to configure, maintain and troubleshoot routers, routing and routing protocols on networks. **Prerequisites: ITA142 and 126.**

**ITA142 Network Operating Systems 1** 5 Credits

This course introduces a variety of network operating systems. The student gains an understanding of the basic functions of network administration, configuration, installation, network devices and cabling. **Prerequisites: ITA112 and ITA126.**

**ITA152 Technical Support and Customer Service** 3 Credits

This course is designed as a study of technical support/help desk concepts and techniques for supporting computers and computer services. This course prepares students to train and support end-users. Topics include end-user support functions, developing training modules, and strategies to provide ongoing technical support. The student will be involved with actions and events related to helpdesk procedures and processes. Emphasis is on solving user related issues, needs analysis, troubleshooting, and interaction with users. **Prerequisite: ITA124.**

**ITA165 Database Development** 5 Credits

This course presents full coverage of planning, creating, and manipulating records using database computer software. Topics include managing, arranging, and searching for data of existing databases using database software to create reports, labels and letters, and linking databases. **Prerequisite: ITA103.**

**ITA195 Network Operating Systems 2** 5 Credits

This course provides the foundation for installing and supporting current versions of Microsoft Windows Operating Systems used in a network environment. The goal of the course is to provide the necessary skills to install, configure, troubleshoot and support desktop and server versions of these operating systems. **Prerequisite: ITA142.**

**ITA196 Network Operating Systems 3** 5 Credits
This course is designed as a hands-on, complete overview of the many aspects of the Linux operating systems. Students will gain knowledge in such areas as basic commands, system commands, shells, editors, the Graphical User Interface, user management and administration. **Prerequisite:** ITA195.

**ITA203 Network Infrastructures**  
5 Credits
This course provides the student with the knowledge and techniques for setting up directory services and network infrastructures in a corporate environment. Emphasis is on networking services such as DHCP and DNS, as well as routing and directory services. **Prerequisite:** ITA195.

**ITA211 Server Applications**  
3 Credits
This course introduces the student to common applications found on most modern networks, ranging from mail servers to database and back-up servers. The course focuses on major functions of these applications and prepares the student to provide the necessary entry-level support. **Prerequisite:** ITA195.

**ITA224 Information Systems Administration**  
5 Credits
This hands-on capstone course is a culmination of methods and procedures used in installation, configuration, troubleshooting, support and maintenance of client/server technologies and network deployment. This high-level course integrates knowledge attained in several prior courses and synthesizes it into a complex simulation of real-world situations. Students are provided with typical business scenarios that require them to analyze alternative solutions and recommend strategic processes. **Prerequisites:** ITA196, ITA136 and ITA203.

**ITA229 Enterprise Systems Deployment**  
5 Credits
This project-based, capstone course examines the methods and procedures used in the design, implementation, configuration and maintenance of modern virtual and non-virtual computer systems. Topics include the planned deployment for hardware and software installations, performance monitoring, analysis and benchmarking system configurations, implementation of troubleshooting procedures and the use of change controls used to evaluate computer systems. Additional emphasis will focus on the individual and group communication process, documentation of system related issues and the strategic management issues unique in the information technology environment. **Prerequisites:** ITA124 and ITA126.

**ITA230 Client Application Support**  
3 Credits
This course is designed as a study of technical support of various business client-side applications. This course prepares students to train and support end-users. Topics include supporting email clients, Microsoft Share Point, Web clients and Virtual Conferencing in a corporate environment. Students will be involved with actions and events related to helpdesk procedures and processes. Students will use procedures and processes in line with common helpdesk methodology. Emphasis is on solving user related issues, needs analysis, troubleshooting, and interaction with users. **Prerequisites:** ITA152 and ITA211.

**ITP202 Project Management**  
3 Credits
This course focuses on teamwork, projects analysis, and collaborative problem solving as it relates to the information technology field. Students will be exposed to a variety of project management principles, practices, and technical tools.

**ITP211 Programming Mobile Applications**  
3 Credits
This course serves as an introduction to the development of applications for mobile devices including the techniques necessary to create both basic and advanced programs. The discussion topics will include, but are not be limited to: User Interface Components, User Interaction, Multi-view Applications and Basic Data Persistence. **Prerequisites:** SSD251 and SSD301.

**ITP252 GUI Development**  
3 Credits
This course uses visual programming techniques to develop GUI applications. Emphasis is on the development of GUI applications that use advanced programming to combine database, data structure, and robust programming techniques to produce programs that have the look and feel of commercial applications developed in industry. **Prerequisite:** SSD552.

**ITP262 Programming Enterprise Applications**  
4 Credits
This capstone course requires the student to work in a group environment, creating an enterprise application utilizing the concepts, techniques, and skills developed in the computer programming curriculum. **Prerequisites:** SSD451 and SSD552.

**ITP301 Introduction to Game Design**  
5 Credits
This course introduces students to the rigorous field of interactive simulation and video game design in a 2D environment. Topics of discussion include the issues inherent in the process of game design and the skills and tools necessary for story and character development. The focus of the course will be hands-on development of 2D computer games. **Prerequisites:** SSD301 or SSD552.
ITP306 Game Development 1 4 Credits

This course is a continuation of ITP301 Introduction to Game Design and will focus on 2D Graphics and Animation, User Interface, Interactivity, Game States, Levels, Sound Effects and Music. The focus of the course will be hands-on development of 2D computer games.  Prerequisite: ITP301.

ITP312 Game Development 2 7 Credits

This course deals with the study of the technology, science, and art involved in the creation of computer games. The focus of the course will be hands-on development of 3D computer games. Prerequisite: ITP306.

ITS264 Digital Forensics 5 Credits

This course is designed to provide the student with an introduction to the Computer Forensics field of study. Topics covered in this course will assist the student with the proper collection, analyzing and storage of digital evidence. Students will also learn the process of completing a computer investigation using various computer forensic utilities and software applications throughout the course. Prerequisite: Acceptance into the Network Security and Computer Forensics concentration or Department Chair approval.

ITS273 Information Security 1 4 Credits

This introductory course is designed to provide students with fundamental concepts of Network Security. Student will be introduced to terms and techniques related to providing confidentiality, integrity and availability of information. Prerequisite: ITA136.

ITS280 Regulatory Compliance 3 Credits

This course is designed to provide the student with the concepts of specific legislation regarding Information Technology. The emphasis will focus on HIPAA, Sarbanes Oxley, Privacy Act of 1974 and the Buckley Amendment. Prerequisite ITS273.

ITS281 Information Security 2 5 Credits

This course is designed to increase the depth of knowledge and skills of the Network Security and Computer Forensics student charged with administering and securing information systems and networks. The student will learn host system hardening, system availability monitoring, network access control and applied encryption technologies, intrusion detection systems, as well as logging, forensics, and incident analysis and response techniques. Prerequisite: Acceptance into the Network Security and Computer Forensics Concentration or Department Chair approval and successfully passing ITS273 with a minimum “C” grade.

ITS287 Information Systems Auditing 5 Credits

This course introduces the concepts of Information Systems audits and controls based on related standards, guidelines and best practices. Instruction in policy review will enable students to apply appropriate controls to enterprise governance, ensuring confidentiality, integrity and availability of information. Students will learn business continuity and disaster recovery planning techniques. Prerequisites: Acceptance into the Network Security and Computer Forensics Concentration or the Department Chair approval, and successfully passing ITS273 with a minimum “C” grade.

ITS289 Ethical Hacking 4 Credits

This course is designed to provide the student with the terminology and acceptable practices associated with ethical hacking techniques. Students will learn the role and skills sets required to become an ethical hacker for the purpose of vulnerability research. Additionally, students will become familiar with the legal implications of hacking and the specific law(s) pertaining to this practice. Prerequisites: Acceptance into the Network Security and Computer Forensics Concentration or the Department Chair approval; Students must sign a Code of Ethics to participate in this class, and successfully pass ITS273 with a minimum “C” grade.

MED101 Keyboarding 3 Credits

This course is designed to develop correct touch-typing techniques as a basis for building, maintaining, and improving speed and accuracy. Emphasis is placed on the mastery of the keyboard, including figures and symbols. The student will demonstrate the ability to type 30 words per minute and to format documents through the use of Microsoft Word, PowerPoint and Excel.

MED106 Medical Terminology 1 5 Credits

This course introduces the student to the language of medicine. Using a systemic approach, students learn roots, prefixes, suffixes and combining forms to build a usable medical vocabulary. Abbreviations common to body systems will be discussed.

MED111 Clinical Techniques 1 4 Credits
This course provides students with basic clinical skills. Emphasis is placed on learning the fundamentals of procedures that relate to patient care. Topics to be covered include: medical asepsis and infection control, screening and interviewing patients, preparing the medical record, and taking measurements and vital signs. Students will also be introduced to the electronic health record.

**MED121 Clinical Techniques 2**  
4 Credits

This course provides the students with additional knowledge of clinical skills. Emphasis is placed on assisting the physician. Topics to be covered include: assisting with the patient examination disinfecting and sterilizing equipment, and assisting with surgical procedures. **Prerequisite:** MED111

**MED123 Medical Office Administration**  
3 Credits

This course is a continuation of the procedural steps in performing the administration functions in a medical facility. Topics to be covered include: professional fees, billing, collections, insurance claim forms, banking services, management of practice finances, telephone technique, and appointment scheduling.

**MED131 Clinical Techniques 3**  
3 Credits

This course provides the students with additional knowledge of clinical skills, specifically the administration of medication. Topics to be covered include the administration of oral medication, administering intradermal, subcutaneous and intramuscular injections, dosages, and calculations. Students will master these skills through hands-on application with models and classmates. **Prerequisites:** MED111 and GMG100.

**MED141 Clinical Techniques 4**  
3 Credits

This course provides the students with additional knowledge of clinical skills. Topics to be covered include: eye and ear exams and procedures, physical agents to promote healing, assisting with the gynecological examination and the pediatric examination. **Prerequisite:** MED111

**MED143 Clinical Techniques 5**  
3 Credits

This course provides students with additional knowledge of procedures and skills used in the medical office and laboratory. Topics to be covered include: introduction to the medical lab; procedures for collecting, handling and transporting specimens; CLIA regulations; laboratory care and safety; and phlebotomy. Methods used include evacuated tubes, butterfly, syringe and dermal punctures. Students will master these skills through hands-on application with models and classmates. **Prerequisite:** MED111.

**MED145 Diseases and Diagnostic Methods**  
5 Credits

This course examines the etiology, signs and symptoms, diagnostic procedures, treatment, prognosis, and prevention of selected diseases and disorders of each body system. The subjects of congenital abnormalities, pediatric illnesses, and pain and its management are included.

**MED158 Information Management and Computerized Coding**  
4 Credits

This course builds on concepts learned in Computerized Medical Office Procedures and Coding for Physicians and Hospitals 1, integrating computer system functionality to computerized medical coding. Students will focus on performing computerized coding for medical records with software used in the field for physician and outpatient hospital coding, including integrating computerized coding to the patient’s electronic medical record and patient accounting computerized procedures. **Prerequisites:** MED223 and MED256.

**MED202 Healthcare Delivery in the Medical Office**  
4 Credits

This course introduces the student to the operating functions and departmental responsibilities in physician offices, clinics, and urgent care centers. The student will become familiar with how coding responsibilities are connected to many other functions within an organization. Students will also learn to properly communicate with both internal and external customers and also learn professionalism skills.

**MED205 Insurance Billing and Collections**  
5 Credits

Insurance Billing and Collections introduces the student to various health insurance carriers, including government plans, and legal and regulatory requirements for both billing and coding. Students will be introduced to steps involved in the billing cycle, including accounts receivable collections, and understand how each phase applies to medical coding. The course also introduces the student to payer fee schedules and reimbursement methods for both physician office and outpatient hospital procedures and services.

**MED208 Coding for the Medical Assistant**  
4 Credits

This course is designed to teach students the basic principles of the International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM) and CPT coding for the physicians' office. The student will be provided with hands-on experience through application of coding principles with examples and exercises based on actual case documentation.
<table>
<thead>
<tr>
<th>Course Code</th>
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<tr>
<td>MED213</td>
<td>Coding for Physicians and Hospitals 1</td>
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<tr>
<td>MED215</td>
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<td>MED223</td>
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<td>MED225</td>
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<td>MED228</td>
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<tr>
<td>MED236</td>
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<td>MED266</td>
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Coding for Physicians and Hospitals 1 introduces the student to coding diagnoses with codes from the International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM). The student will become familiar with coding rules associated with coding diagnoses and conditions for both physician office and outpatient hospital coding from one-line documentation and medical records. **Prerequisite:** MED275.

This course is a study of the laws of the United States as they relate to the health care industry. Topics to be covered include: use of medical records, contracts, liability, patient rights, HIPAA, emergency care, Good Samaritan laws, confidentiality, right to privacy, informed consent laws, and the structure of the legal system. After researching, team panels will debate bioethical issues.

Coding for Physicians and Hospitals 2 introduces the student to coding services and procedures with codes from the Current Procedural Terminology, 4th Edition (CPT-4) and codes from the Healthcare Common Procedural Coding System (HCPCS) for Medicare and Medicaid. The student will become familiar with coding rules. **Prerequisite:** MED275.

This course uses a systems approach in learning major classifications of medications and medications of choice for selected disease processes and pathological conditions. The student will also learn to calculate the dose administration for parenteral and non-parenteral medications. **Prerequisite:** MED295.

This course introduces Pharmacological aspects that correlate with the operating room and surrounding settings. The student will compare and contrast methods, agents, and techniques of administration and preparation of various medications and solutions. Topics to be covered will include surgical team roles during administration, care and handling of medications and solutions, medication measurements and calculations, packaging and delivery sources of medications, and classification of agents used in surgery.

This course combines transcription techniques, medical terminology, spelling, punctuation, proofreading, and keyboarding skills in the transcription of histories and physicals, discharge summaries, consultations and operative reports. **Prerequisites:** MED101 and MED295.

This course continues to develop the student's medical transcription skills and increased production speeds. **Prerequisite:** MED236.

This course provides the students with knowledge of laboratory procedures. Topics to be covered include: electrocardiography, respiratory testing, urinalysis, and emergency preparedness. **Prerequisite:** MED111 and MED143.

This course introduces the student to software used in both the physician office and hospital settings. Students will use the software to follow real-world activities for building medical records, interpreting medical documentation, and procedures related to medical coding: patient registration, charge entry, diagnosis and procedure coding, insurance billing, and collections.

This course provides the students with additional knowledge of laboratory procedures. Topics to be covered include: hematology studies, blood chemistry, CLIA waived rapid tests, microbiology, fecal occult tests, colon procedures, and lab call backs. **Prerequisites:** MED111 and MED143.

This course is designed to explore the role of medical personnel within the framework of the health care profession and to assist the student in the transition from student to health care team member. Library research, guest speakers, review of skills, patient simulation, and job search techniques are utilized. First-aid training and Cardio-Pulmonary Resuscitation (CPR) certification are included. **Prerequisite:** Satisfactory completion of all course requirements.
MED275 The Body in Sickness and Health 1  
This course introduces the student to three different areas: medical terminology, anatomy and physiology, and diseases. The student will build medical terms by learning individual word parts: prefixes, suffixes, and combining forms. Students will use the terminology basics to further explore the structure of the body, basic chemistry, the cell, tissue, and body systems. Students will be presented with a basic knowledge of pathology and the development of disease. Students will learn pharmaceutical terminology and basic pharmaceutical concepts. Students will examine the etiology, signs and symptoms, diagnostic procedures, treatment, prognosis, and prevention of selected disease and disorders of the integumentary system.  

MED285 The Body in Sickness and Health 2  
This course builds on the student’s knowledge obtained in Body 1 to build words for the blood, cardiovascular, circulatory, lymphatic, digestive, and urinary systems. Students will use the terminology basics to further explore the structure and function of these systems. In addition, the etiology, signs and symptoms, diagnostic procedures, treatment, prognosis, and prevention of selected disease and disorders of these systems. Prerequisite: MED275.  

MED295 The Body in Sickness and Health 3  
This course builds on the student’s knowledge in Body 1 to build words for the musculoskeletal, nervous, endocrine, sensory, respiratory, and reproductive systems. Students will use the terminology basics to further explore the structure and function of these systems. In addition, the etiology, signs and symptoms, diagnostic procedures, treatment, prognosis, and prevention of selected disease and disorders of these systems. Prerequisite: MED275.  

MED301 Reimbursement Methods and Regulatory Guidelines  
The student will research coding and billing regulations specific to individual insurance plans, using payer websites. The course introduces students to hospital delivery systems, interpreting physician office claim forms (CMS-1500) for billing primary and secondary insurances and interpreting information and field locators on the outpatient hospital claim form (UB-04). Students will also learn to interpret insurance plans’ regulatory information and correct coding edits, review manuals, transmittals, and national and local coverage determinations, and understand payment methodologies for physicians and hospitals, including the Outpatient Prospective Payment System and Diagnosis Related Groups for Medicare. Prerequisite: MED205  

MED311 Chart Abstracting for Physicians and Hospitals and Coding Simulation  
This course introduces the student to advanced coding for both diagnoses (ICD-9-CM) and services and procedures (CPT-4 and HCPCS) by reviewing medical records. Students will become familiar with reading and interpreting medical record information and coding from entire medical records for physician office and outpatient hospital settings. The course also covers coding scenarios independently without previous textbook explanations. The student will receive simulated real-world experience to code independently with instructor-led facilitation for either physician or outpatient hospital coding. Prerequisites: MED213 and MED223.  

MED321 Auditing for Physicians and Hospitals and National Exam Preparation  
This course builds on the knowledge learned in Coding for Physicians and Hospitals 1 and 2 and Chart Abstracting for Physicians and Hospitals and Coding Simulation. It introduces the student to auditing medical records for both physician offices and outpatient hospitals. The student will become familiar with auditing techniques and learn how to present audit findings to physician office and hospital staff. This course also prepares students for the national coding exam with reviews of medical terminology, anatomy and physiology, diseases, health insurance reimbursement and regulatory guidelines, coding rules for physician offices and hospital settings, and coding diagnoses and procedures from medical records. This course is taken in conjunction with or after MED311. Prerequisites: MED213 and MED223.  

MKT100 Principles of Marketing  
This course features an introduction to the marketing environment, marketing research, and the role of marketing in organizations today. Topics include sales promotions, product placement, and pricing strategies in the movement of products from the business to the consumer.  

MKT120 Consumer Behavior  
This course provides students with the knowledge and skills necessary to perform consumer analyses that can be used for understanding markets and developing effective marketing strategies. Primary emphasis is on the ways in which a consumer might behave as a purchaser and user of goods and services in our society.  

MKT128 Advertising and Promotions  
This course is designed to give students a broad view of advertising principles and their relationship to product marketing. The students will focus on the creative functions of advertising by preparing rough layouts and writing copy for various types of ads.
MKT200  Professional Selling  4 Credits
This course provides students with an understanding of the principles and techniques necessary to sell a product, service, or idea. Students develop sales presentations and use role playing to present them to the class.

MKT210  E-Commerce and Internet Sales  4 Credits
This course focuses on E-Business service in relation to the Internet. Topics include the influence of E-Commerce, identifying E-Business resources, managing project implementation, developing product Internet/Extranet launches, marketing E-Business services, and disintermediation.

MMA102  Introduction to Media Technologies  3 Credits
This course is designed to provide the student with an overview and exposure to basic multimedia concepts and software. Students examine introductory theories and concepts of both web and video projects. Preproduction of multimedia elements is stressed.

MMA103  Audio/Video Editing  3 Credits
Students learn the theory and processes of audio/video editing using non-linear editing software on the desktop. Exercises in production and post-production techniques are applied for various delivery media. Students produce and edit a series of short videos for video, disk, and Internet applications. A 70% grade must be attained at this level if continuing into MMA222 Advanced Editing.

MMA104  3-Dimensional Modeling and Animation 1  3 Credits
This course introduces students to the fundamentals of 3-dimensional computer modeling and how it applies to a multimedia project. Using basic modeling techniques and utilizing texture, lighting, and environmental effects, students model and render 3-dimensional forms to create surreal and realistic images. A 70% grade must be attained at this level if continuing into MMA200 3-Dimensional Modeling and Animation 2.

MMA105  Web Authoring Design  3 Credits
This course focuses on the students’ basic authoring skills by concentrating on the demands, details, and subtleties of creating web pages. HTML and supplemental client side scripting are the primary focus of this course. In addition, processes of graphic and multimedia creation—adding interactivity, color use, file management and formats, testing, publishing, and publicizing are addressed. Students use interactivity and multimedia elements to enhance their site design. A 70% grade must be attained at this level if continuing into MMA106 Client Side Web Development.

MMA106  Client-Side Web Development  3 Credits
This course is an introduction to basic programming through client-side languages. Students will integrate front end technologies and interactivity according to web standards and also explore programming concepts such as data types, control flow, functions, and events. An emphasis will be placed on writing efficient code, problem solving common errors, and user experience. A 70% grade must be attained at this level if continuing to MMA202 Interactive Design.

MMA107  Dynamic Content Management  3 Credits
This course introduces students to the standards for designing relational databases. The course focuses on record creation, modification, and deletion as well as report generation and database design. In addition, Structured Query Language is utilized to obtain dynamic information for multimedia authoring.

MMA109  Media Design  3 Credits
This course focuses on the fundamentals of the visual design elements of line, shape, and color, with the emphasis on creative thinking, time, audio and problem solving using various electronic techniques and methods.

MMA110  Interactive Media  3 Credits
This course introduces students to the aspects of graphic manipulation, digital composition, timelines, movement, and other animation as they pertain to web and interactive development. Students expand their skills through projects which combine interactivity with animation.

MMA143  Delivery for the Web  3 Credits
This course teaches students to combine text, image, video, and sound content into interactive applications for Internet delivery. The emphasis is on learning those media-integration skills necessary to produce a multimedia portfolio. Prerequisite: MMA105.

MMA200  3-Dimensional Modeling and Animation 2  3 Credits
Once students have learned the basics of 3-D modeling and rendering, they explore the fundamentals of animation and the more advanced methods of modeling and texturing. Students create photo-realistic products and environments utilizing complex technical techniques and thorough creative design. Emphasis is placed on detailed modeling and texture mapping complementing elementary 3-D animation and story development. Prerequisite: MMA104.

MMA201 Server Side Scripting 3 Credits
This course focuses on dynamic interactive web sites. Students learn to create data driven pages that access stored information dynamically using a server side scripting language. Prerequisites: MMA105 and MMA107.

MMA202 Interactive Design 3 Credits
This course emphasizes the theory and practices of screen design and user interactivity in interactive projects. Students improve their knowledge of scripting languages to dynamically manipulate data. Prerequisite: MMA105.

MMA203 Videography 3 Credits
This course is designed to teach students how to plan and successfully execute video productions under both field and studio conditions. Proper pre-production will be emphasized along with safety and basic legal issues related to modern videography. Students will receive instruction on advanced lighting techniques for indoor, outdoor, and studio situations. Students will learn and use proper framing and image composition. The acquisition of high quality audio will be stressed throughout the course. The vital relationship between videography and post-production will be explored at all times in the course. Students sharpen their skills through the creation of high quality, in-depth video projects in a variety of genres. A 70% grade must be attained in GAD136 to advance into this class.

MMA204 Audio Production 3 Credits
This course is designed to introduce the principles and practices of indoor, outdoor and studio audio recording to the student. Topics range from the nature and physics of sound to producing sounds for various media, including broadcast and interactive media. Throughout the course students will gain hands-on experience in field recording both indoor and outdoor, studio recording, mixing and post processing for industry standards and file formats. Students will learn to creatively record and edit audio utilizing industry equipment and techniques such as: microphones and their placement, cameras, mixing consoles and non-linear editing software. Upon completion, the student will have the skills needed to create quality audio for use in other multimedia applications.

MMA205 Motion Graphics 1 3 Credits
Students will explore and create assignments utilizing basic animation principles. They will learn how to pre-visualize and produce animated sequences through a series of exercises. Industry-standard animation software is utilized for the creation of animations in the class with a focus on 2D and 3D animations. A 70% grade must be attained at this level if continuing into MMA211 Motion Graphics 2 and MMA214 3D Media Animation.

MMA210 Interactive Development 3 Credits
Students develop interactive projects, with an emphasis on planning and teamwork. Theories of instructional design and usability are introduced, and consideration for target audience is stressed.

MMA211 Motion Graphics 2 3 Credits
In this class, students create graphics commonly used for news stations, station identifications, commercials, and industrial films, title sequences for film and television, and DVDs. They produce motion graphics through exercises in 3-D animation, compositing, chroma keying, and video special effects. Tools for creating motion graphics and visual effects for film, video, multimedia and web delivery are utilized.

MMA212 Advanced Visual Effects 3 Credits
This course focuses on the techniques and tools used to combine graphics created in 2-D and 3-D applications with audio, video and/or animated footage. The student will develop 3-D models and special effects to use in a composite within a non-linear video editing and/or compositing application. Advanced 3-D layer techniques will be discussed and applied to create industry quality motion graphics. Scripting and expressions will be utilized in the creation of custom animations. The use of particle effects in both video and 3-D applications will enable the students to simulate and create dynamic fluid and atmospheric effects. Students will also perform simple motion tracking tasks to synchronize visual effects or other images with moving footage.

MMA214 3D Media Animation 3 Credits
3-D Media Animation will explore animation and rendering techniques used in the broadcast industry. Students will build creative title sequences, animated logos and product visualizations while exploring advanced 3-D techniques. Students will also gain insight
and a working knowledge of storytelling through the planning process as ideas are taken from concept to completion. **Prerequisite:** MMA200.

**MMA218 Video/3D Senior Project**

4 Credits

In this advanced level course students will work on team projects as they relate to the Video/3D industries, following best practices in project management, workflow and communication. Students will focus on prototyping, problem solving, experimentation, and execution of project deliverables in a team environment.

**MMA219 Web/Interactive Senior Project**

4 Credits

In this advanced level course students will work on team projects as they relate to the Web /Interactive industries, following best practices in project management, workflow and communication. Students will focus on prototyping, problem solving, experimentation, and execution of project deliverables in a team environment.

**MMA222 Advanced Editing**

3 Credits

Students will expand their knowledge of the editing process by creating projects utilizing advanced editing tools and techniques. Students will develop standard and high-definition projects utilizing non-standard frame rates, scan types, and advanced audio mixing with surround sound. The management of large-scale projects will be stressed along with project recovery techniques. Advanced exporting and distribution methods for broadcast, interactive, and web-based video will be covered including the authoring of DVDs with sub-menus, motion backgrounds, and interactivity. **Prerequisite:** MMA103.

**MMA224 Advanced Interactive Technologies**

3 Credits

In this advanced course, students learn aspects of advanced programming languages that allow for scripting of complex interactive applications for Internet delivery. Students also survey the newest technologies and their impact on multimedia and visual design. **Prerequisite:** MMA110.

**MMA225 Web/Interactive Portfolio Development**

8 Credits

In this course, students create an industry-quality portfolio consisting of enhanced and updated projects from previous classes as well as newly created projects. Students create a final portfolio using a consistent theme related to their personal identity.

**MMA226 Video/3D Portfolio Development**

8 Credits

In this course, students create an industry-quality portfolio consisting of enhanced and updated projects from previous classes as well as newly created projects. Students create a final portfolio using a consistent theme related to their personal identity.

**MNP104 Windows Server Administration Fundamentals**

5 Credits

This course is designed to teach the student Windows Server Administration Fundamentals including Server installation, roles, storage, performance management, and server maintenance.

**MNP113 Installing & Configuring Windows Server 2012**

5 Credits

This course provides the foundation for installing, deploying and supporting current versions of Microsoft Windows Operating Systems. This includes installation of Active Directory and its supporting technologies. The goal of the course is to provide the necessary skills to install, configure, troubleshoot and support server versions of these operating systems. **Prerequisite:** MNP104.

**MNP123 Administering Windows Server 2012**

10 Credits

This course focuses on configuration and troubleshooting of Active Directory and configuration and troubleshooting of network services. Topics in this course include: configuring file and print services, configuring network services and remote access technologies, configuring a network policy server infrastructure, and configuring and managing Active Directory and group policies. **Prerequisite:** MNP113.

**MNP133 Configuring Advanced Windows Server 2012**

5 Credits

This course focuses on advanced network infrastructure for Windows Server 2012 including: configuring and managing high availability; configuring file and storage solutions; implementing business continuity and disaster recovery; and configuring advanced corporate network services. **Prerequisite:** MNP123.

**MNP143 Designing & Implementing a Server Infrastructure**

5 Credits
This course covers topics such as planning and implementing a Windows server infrastructure, designing and implementing network infrastructure and access services, and designing and implementing an Active Directory infrastructure. **Prerequisite: MNP133.**

**MNP163 Implementing an Advanced Server Infrastructure**
4 Credits

This course focuses on the advanced Windows Server 2012 environment including: implementing, managing and maintaining a server infrastructure; planning and implementing a highly available enterprise infrastructure; and planning and implementing a server virtualization infrastructure. **Prerequisite: MNP143.**

**MNP172 CISCO Certified Network Associate**
5 Credits

This course is designed to provide students with the necessary skills and knowledge to design, build, and maintain a medium-sized network using CISCO routers, switches, and hubs. The course prepares students for the most recent CCNA certification.

**NUR103 Anatomy and Physiology 1**
4 credits

This course is a systemic review of human biology with emphasis on homeostatic mechanisms that allow for normal anatomic and physiologic function. References will be made to pathological conditions when appropriate. Topics of discussion will include direction and anatomical terminology, cellular form and function, tissues, integumentary, skeletal, muscular, nervous, and endocrine systems. **Co-requisite: NUR113.**

**NUR104 Psychosocial and Psychiatric Issues**
4 credits

This course introduces the practical nursing student to the study of human behavior. Units of content focus on: personality development; definitions of mental health and mental illness; types and measurement of intelligence; explanations of cognition, perception, and sensation; positive and negative social influences and behaviors; theories that explain motivation; theories regarding learning and reasoning; concepts associated with holistic health care; communication skills; psychosocial issues in patients with health problems; types of mental disorders and their symptoms; and the application of nursing process in working with patients experiencing alterations in behavior. **Prerequisites: All 1st and 2nd quarter courses.**

**NUR108 Microbiology**
4 Credits

The focus of this course is on the structure, function, and environment of microorganisms with emphasis on those which are pathogenic. Discussion topics will include an introduction to the basic principles of microbiology, the morphology and life cycle of bacteria, epidemiology, immunology, and control of microorganisms. The pathogenesis and progression of infectious disease will also be explored. **Co-requisite: NUR111.**

**NUR109 Foundations of Nursing 1**
10 Credits

This course provides an introduction to practical nursing, including the following units of content: history of practical nursing, the importance of patient safety and quality care, the impact of culture on health and illness, nursing’s core values, concepts basic to the practice of nursing such as principles of communication and ethics, infection control, introduction to planning nursing care utilizing the nursing process, basic concepts of nutrition and dietary adaptations for treatment of health issues, and basic patient care skills. A clinical practicum is included in this course, with learning experiences in the nursing skills laboratory and simulation center, as well as in long term care facilities. The goal of these experiences is to provide the beginning student with the opportunity to develop basic assessment, planning, and care giving skills that assist patients with activities of daily living. **Co-requisites: NUR103, 108, 111,113.**

**NUR111 Microbiology Lab**
2 Credits

This course is an introduction to the basic laboratory techniques used to observe and identify microorganisms. Students will master the use of the microscope and the performance of the Gram Stain technique, along with the cultivation and identification of bacteria. In addition, adherence to laboratory safety rules and the maintenance of aseptic technique will be emphasized throughout the course. **Co-requisite: NUR108.**

**NUR113 Anatomy and Physiology 1 Lab**
2 Credits

This course is an introduction to the basic laboratory techniques used to observe and identify anatomical structures and demonstrate physiological principles. Students will examine dissected specimens, anatomical models, and charts to achieve course competencies. Topics discussed include anatomical terminology, cellular form and function, tissues, integumentary, skeletal, muscular, nervous, and endocrine systems. **Co-requisite: NUR103.**

**NUR118 Anatomy and Physiology 2**
4 Credits

This course is a systemic review of human biology with emphasis on homeostatic mechanisms that allow for normal anatomic and physiologic function. References will be made to pathological conditions when appropriate. Topics of discussion will include blood, cardiovascular, lymphatic and immunology, respiratory, urinary, digestive, and reproductive systems along with fluid/electrolyte and acid-base balance mechanisms. **Prerequisites: Successful completion of NUR103, NUR108, NUR111 AND NUR113. Co-requisite: NUR119.**
### NUR119 Anatomy and Physiology 2 Lab

2 Credits

This course is an introduction to the basic laboratory techniques used to observe and identify anatomical structures and demonstrate physiological principles. Students will examine dissected specimens, anatomical models, and charts to achieve course competencies. Topics discussed include blood, cardiovascular, lymphatic and immunology, respiratory, urinary, digestive, and reproductive systems along with fluid/electrolyte and acid-base balance mechanisms. **Co-requisite:** NUR118.

### NUR121 Foundations of Nursing 2

10 Credits

This course builds on the knowledge and skills gained in NUR 109: Foundations of Nursing 1. In this course, there is continued emphasis on the mastery of skills fundamental to nursing practice. Units of content focus on: completing a health history with various types of patients; physical, psychosocial, and nutritional assessment techniques; adaptation of assessment techniques for various cultures; and planning for nursing care based on analysis of patient assessment data. Additional emphasis will be placed on health education for patients and families based on identified or potential health needs. There is a clinical practicum associated with this course, where students refine their ability to assess and understand human responses to stressors and diseases. In addition, students refine their ability to plan and implement nursing care in response to human needs. **Prerequisites:** All 1st quarter courses.

### NUR133 Maternity Nursing

5 credits

The focus of this course is on the basic needs and associated nursing care of patients and families in maternity settings. An emphasis is placed on the physical, nutritional, and psychological changes experienced by a woman during the antepartal, intrapartal, and postpartal periods. The impact on the family is explored, along with strategies for providing developmentally and culturally appropriate health education. Clinical experiences are provided in inpatient and community based settings with a maternity focus. **Prerequisites:** All 1st, 2nd, and 3rd quarter courses.

### NUR134 Pediatric Nursing

5 credits

The focus of this course is on the basic needs and associated nursing care of patients and families in pediatric settings. Emphasis is placed on growth and development, the nutritional needs of children and adolescents, health issues, and common medical and surgical disorders in children and adolescents. Parental needs and the impact of health concerns on the family are explored along with strategies for providing developmentally and culturally appropriate health education. Clinical experiences are provided in inpatient and community based settings with a pediatric and/or family focus. **Prerequisites:** All 1st, 2nd, and 3rd quarter courses.

### NUR137 Pharmacology in Nursing

4 Credits

This course provides the practical nursing student with an introduction to drug therapy. Units of content include: drug classifications, common medications, pharmacologic principles, and legal and ethical considerations in administering medications. Dose calculations, procedures and techniques in medication, immunization, and fluid administration are explored. There is a lab associated with this course, in which students will have opportunities to practice skills associated with administration of medications, immunizations, and fluids. Emphasis is placed on patient safety, along with health teaching regarding medication uses, actions, interactions, and side effects. **Prerequisites:** all first quarter courses.

### NUR142 Medical/Surgical Nursing Care of the Adult

10 credits

The focus of this course is on common health concerns of adults. Frequently occurring medical and surgical disorders of adults will be examined. Physical, psychological, nutritional, and spiritual needs of patients and their families will be explored. The application of nursing process to promote safe, high quality care in medical/surgical care settings will be emphasized, including clinical judgment and decision making as a result of effective critical thinking and clinical reasoning. Students will have clinical opportunities to provide nursing care and health education in short and long term acute care settings, with an emphasis on patient-centered care for acute and chronic illnesses. **Prerequisites:** All 1st and 2nd quarter courses.

### NUR143 Pharmacology Applications in Nursing

2 Credits

This laboratory learning experience includes 40 hours of instruction and skill practice focused on the application of Pharmacology information to the Practical Nurse role and responsibilities. Units of content include: dosage calculation, methods of medication and fluid administration, intravenous therapy skills appropriate for LPN scope of practice in Pennsylvania, adaptations of medication administration and assessment of response for particular age groups or populations, practical nursing responsibilities for documentation, nursing responsibilities for assessment and evaluation of patient responses to medication, immunization techniques, principles of patient teaching related to pharmacologic approaches to health and illness, and legal/regulatory aspects of PN scope of practice related to Pharmacology. **Co-requisite:** NUR137.

### NUR147 Gerontology and Nursing Practice

6 Credits

The focus of this course is on the theories and concepts of aging, including physiological, psychological, social, and spiritual changes. Issues critical to providing safe, high quality nursing care to older adults will be discussed, including: safety strategies, quality of life, culture, symptoms and treatment for dementia, activity, sleep, adequate nutrition, home care, palliative care, and end-of-life care. Clinical experiences will provide the student with an opportunity to examine holistic nursing care for individuals and groups in a variety of geriatric settings across the health care continuum. **Prerequisites:** All 1st, 2nd and 3rd quarter courses.

### NUR150 Transition into Nursing Practice

10 Credits
This course focuses on the transition from being a student to assuming the responsibilities of the practical nurse. Units of content include: current trends and issues in practice, opportunities and challenges facing the Licensed Practical Nurse, skills for successful beginning practice, organization and financing of health care delivery systems, leadership theories and skills that promote safe and high quality nursing care, management theories and skills, strategies for lifelong learning, preparing for the first position in nursing, successful completion of the licensure examination, and adaptation to the work environment. The student has an opportunity to refine patient care skills and explore leadership/management responsibilities in a selected health care environment. **Prerequisite:** Successful completion of the first three quarters.

**PCT101 Medical Terminology/Anatomy and Physiology in Sickness and Health 1**
6 Credits

This course covers basic word structure, terms pertaining to the body as a whole, and terms related to the digestive, urinary, reproductive, and nervous systems. While learning the medical terminology for these body systems, the student will also study the related anatomy and physiology, and procedures used to diagnose and treat their diseases and disorders.

**PCT106 Introduction to Healthcare**
5 Credits

This introductory course focuses on the roles and functions of Assistive Personnel in a variety of healthcare settings. Students will learn how to communicate with members of the Healthcare Team through verbal communication and chart documentation; assist with the nursing processes; and work ethics that affect the assistive personnel. Students will be trained in measuring vitals, identifying normal ranges for vital signs, and factors that influence vital statistics. Students will also begin preparing their resumes and practice interviewing techniques.

**PCT111 Clinical Skills 1**
3 Credits

This introductory hands-on course focuses on safety; body mechanics; infection control; use of restraints; urinary elimination; and collecting and testing urine and stool specimens.

**PCT116 Patient Care Skills 1**
3 Credits

This course covers basic patient care skills in a simulated hospital environment and provides hands-on practice of techniques. Students will study basic nutrition; patient hygiene and grooming; patient comfort, rest and sleep; bed making; fluid intake and output; bowel elimination; and assisting with a physical examination.

**PCT119 Patient Care Skills 2**
3 Credits

This course covers skills that address the physical needs of the patient and includes working with the patient suffering from confusion, dementia, vision and hearing loss; fluid and blood administration; wound care; and heat and cold applications. In addition, students will learn common health problems such as endocrine, digestive, urinary and skin disorders. **Prerequisites:** PCT106, PCT111, PCT116

**PCT121 Medical Terminology/Anatomy and Physiology 2 in Sickness and Health 2**
6 Credits

This course covers terms related to the cardiovascular system, blood, lymphatic and immune system, respiratory system, musculoskeletal system, skin, sense organs, endocrine system, oncology, radiology and nuclear medicine, and pharmacology. While learning the medical terminology for these body systems, the student will also study the related anatomy and physiology, and procedures to diagnose and treat their diseases and disorders. In addition, diagnostic and lab procedures dealing with cancer medicine, radiology and nuclear medicine will be discussed. **Prerequisite:** PCT101.

**PCT124 Clinical Skills 2**
5 Credits

Students will learn the procedures required for preparing the patient and obtaining an electrocardiogram. Patient oxygen needs will also be covered. Students will examine diseases and disorders of the respiratory, blood, lymphatic and cardiovascular systems. **Prerequisites:** PCT106, PCT111, PCT116

**PCT136 Patient Psychology**
6 Credits

The whole person and their basic needs throughout life will be addressed in this course. Students will study human growth and development; common childhood illnesses and developmental disabilities; sexuality; mental health problems; and the dying person. An important aspect of this course is communicating with the patient. In addition, students will learn psychological disorders and diseases and disorders of the nervous system and male reproductive system.

**PCT141 Medical Law and Ethics**
6 Credits

Rules of conduct for Assistive Personnel will be discussed in this course. The legal importance of the medical record, informed consent, and patient rights will be stressed. The importance of liability and adhering to ethical principles will help the student protect themselves as well as their patients from harm. State and federal laws will be explored.

**PCT146 Phlebotomy and Testing Procedures**
4 Credits
This course addresses the collection and testing of blood specimens. Emphasis will be placed on collecting blood specimens by venipuncture and capillary puncture with point of care testing. Collection methods will include evacuated tubes, winged infusion, and syringe. Students will review for the Phlebotomy Certification examination. Prerequisites: PCT106 and PCT124.

**PCT151 Assisting With the Clinical Situation**  
4 Credits

Students will discover ways to assist a patient who has had surgery and will assist patients with rehabilitation and restorative care including exercise and activity. In addition, caring for the mother and her newborn will be covered. Students will examine diseases and disorders of newborns, the female reproductive system, musculoskeletal system, and the nervous system. Students will learn basic emergency care and receive CPR and First Aid certifications. Prerequisites: PCT106, PCT 124, PCT 120.

**PCT160 Clinical Practice**  
3 Credits

This capstone course in the Patient Care Technician Program focuses on extensive hands on skills to facilitate the student into the role of a Patient Care Technician. The student will use prior theory knowledge and hands-on skills to demonstrate how to provide appropriate and safe patient care in a simulated hospital environment. The student will learn and demonstrate how to care for persons with common health problems such as: hearing and vision loss, cancer, confusion and dementia, arthritis, diabetes, thyroid disorders, heart disease, blood disorders, disorders and diseases of the integumentary, reproductive and respiratory systems. The student will also learn the theory behind blood transfusions and will learn how to monitor and care for a patient with transfusion reactions. Prerequisites: PCT106, PCT110, PCT115, PCT125, and PCT131.

**RMA155 Principles of Retailing**  
4 Credits

This course introduces students to all aspects of retailing. Topics include store layout, merchandising, control systems, and planning. Non-traditional retailing methods are also explored. Students will investigate different store layouts and their purpose; key elements in merchandise mixes, and new trends in retailing. The students will develop a retailing plan for a traditional retail outlet.

**RMA300 Visual Merchandising**  
4 Credits

This course introduces students to the most up-to-date principles and techniques on interior and exterior displays, store layouts, and creative visual merchandising to reach their target markets, build a store image, and generate sales.

**RNT100 Nursing Care Evolving Family (T)**  
1 credit

This course focuses on units of content related to nursing care for high-risk maternity patients and complex nursing care needs of acutely ill children and adolescents. The content in this course supplements what was learned in the PTI Practical Nursing Certificate Program and completes the course requirements for the associate degree level course on nursing care of the evolving family.

**RNT200 Acute Care of the Adult (T)**  
6 credits

This course focuses on critically ill adults, their health needs, the associated nursing care, and the differences in scope of practice for registered nurses in comparison with licensed practical nurses. The content in this course supplements what was learned in the PTI Practical Nursing Certificate Program and completes the course requirements for the associate degree level course on acute care of the adult.

**RNT210 Care of Adults with Chronic Illness (T)**  
4 credits

This course focuses on adults with complex chronic illnesses, including illnesses in multiple organ systems in the body. Associated nursing care to meet identified and anticipated health needs of patients and families will be emphasized, along with the differences in scope of practice for registered nurses in comparison with licensed practical nurses. The content in this course supplements what was learned in the PTI Practical Nursing Certificate Program and completes the course requirements for the associate degree level course on care of adults with chronic illness.

**RNT220 Professional Transition into Practice (T)**  
8 credits

This course emphasizes the scope and responsibilities of registered nurse practice, along with additional leadership and management roles and responsibilities of registered nurses, and provides clinical experiences that assist the student in the PTI Transition program for LPN to ASN to synthesize knowledge at the associate in science, nursing level of depth and to apply that knowledge in the clinical practice of nursing skills. This course supplements what was learned in the PTI Practical Nursing Certificate Program and completes the course requirements for the associate degree level course on professional transition into practice.

**RNU175 Introduction to Nursing**  
1 credit

This course introduces the beginning student to the concepts associated with the practice of nursing, including definitions, standards of practice, core values, roles in generalist and advanced practice, key responsibilities of the nurse in relation to quality and safety, and career planning for lifelong learning. In addition, the student explores basic study skills, test taking skills, stress and time.
management skills, and use of resources available to support the learning process. The goal of this course is to prepare the beginning student for success in subsequent terms of the program by laying a solid foundation in nursing.

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>RNU180</td>
<td>Foundations of Nursing</td>
<td>5</td>
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<tr>
<td>RNU185</td>
<td>Primary Care and Wellness</td>
<td>7</td>
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<td>RNU190</td>
<td>Lifespan Development</td>
<td>4</td>
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<tr>
<td>RNU192</td>
<td>Pharmacology Applications for RN Practice</td>
<td>2</td>
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<td>RNU195</td>
<td>Acute Care of the Adult</td>
<td>11</td>
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<tr>
<td>RNU200</td>
<td>Care of Adults with Chronic Illness</td>
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<tr>
<td>RNU205</td>
<td>Nursing Care of the Evolving Family</td>
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</table>

This course introduces the student to elements of nursing practice and basic nursing care skills. Influences on nursing practice, including legal and regulatory processes, are explored. Theories from nursing and other disciplines are examined and applied to clinical patient care situations. Basic head-to-toe assessment techniques are emphasized, along with nursing interventions to create safe patient care environments. Nursing care in specific situations, such as peri-operative care and care of patients who are in pain or are dying, will be emphasized. The student will learn effective ways of communicating with patients.

This course focuses on the critical thinking and clinical reasoning skills needed to make clinical judgments about primary care and wellness needs of adults. Assessment skills are expanded, to include psychosocial, cultural, spiritual, family and community assessment processes and analysis of findings. The significance of assessment findings is explored. Stress as a human response and effective coping strategies will be examined, including situations that involve death and loss. Core values in nursing are applied to nursing care in a variety of primary health care and wellness settings. Students will learn how to promote health and provide health education that is developmentally and culturally appropriate. The ethical and legal responsibilities of the nurse who cares for patients and families will be identified. Prerequisites: Successful completion of nursing courses in the 1st and 2nd quarters.

Within this course, the student has the opportunity to explore common elements of human growth and development across the lifespan. Units of content include: theories of development, prenatal development and birth, infancy, early childhood, middle and late childhood, adolescence, early adulthood, middle adulthood, late adulthood, and death. In each unit, the physiological, cognitive, and psychological changes that occur with normal growth and development are presented. Implications for nursing practice will be highlighted.

This laboratory learning experience focuses on the application of Pharmacology information to the Registered Nurse level of nursing practice. Units of content and skill practice include: dosage calculation, methods of medication administration, intravenous therapy administration, adaptations for particular age groups or populations, nursing responsibilities for documentation, nursing responsibilities for assessment and evaluation of patient responses to medication, principles of patient teaching related to pharmacologic approaches to health and illness, and legal/regulatory aspects of RN scope of practice related to Pharmacology. Co-requisite: NUR137.

This course provides the student with an opportunity to examine nursing care responsibilities in the acute care setting. The emphasis of the content is on the application of critical thinking, clinical reasoning, and nursing process to care of adult patients experiencing an acute episode of illness requiring hospitalization. Units of content include: nursing care associated with inflammation and infection, care of patients with fluid-electrolyte and acid-base imbalances, surgical care of patients with cancer, acute cardiovascular disorders and arrhythmias, acute respiratory disorders, acute alterations in neurological functioning, eye and ear disorders, nursing care associated with burns, gastrointestinal disorders including cancer, hepatic and pancreatic inflammations, acute disorders of the urinary system, traumatic musculoskeletal injuries, transplantation, nursing care of patients with multisystem failure, and the nurse's role in mass casualty care. Prerequisite: Successful completion of 1st, 2nd, and 3rd quarters.

This course introduces the student to elements of nursing practice and basic nursing care skills. Influences on nursing practice, including legal and regulatory processes, are explored. Theories from nursing and other disciplines are examined and applied to clinical patient care situations. Basic head-to-toe assessment techniques are emphasized, along with nursing interventions to create safe patient care environments. Nursing care in specific situations, such as peri-operative care and care of patients who are in pain or are dying, will be emphasized. The student will learn effective ways of communicating with patients.

The emphasis of this course is on the application of critical thinking and clinical reasoning, along with the use of nursing process, as students learn to provide care for adults and families experiencing a chronic illness. Fundamental concepts related to chronic illness, such as the Chronic Care Model, stigma, social isolation, body image, quality of life, and treatment adherence, will be explored. The impact of chronic illness on the family will be examined, along with evidence-based strategies for providing family health education necessary for care giving. Elements of the health care system that need to be coordinated and improved will be explored, including home care, long-term care, rehabilitation, electronic health information sources, and community-based resources. Chronic illnesses that are described include lung disorders such as asthma and chronic obstructive pulmonary disease, coronary artery disease and hypertension, diabetes, degenerative neurological disorders such as multiple sclerosis and Parkinson's disease, chronic disorders of the immune and gastrointestinal systems, chronic renal disease, and musculoskeletal and hematological disorders. Students will have clinical practice experiences in a variety of health care settings which coordinate and provide care for adults with chronic illness. Prerequisite: RNU195.

This course focuses on three key areas of family-centered nursing practice: women's health, antepartal through postpartal health needs of women and infants, and care of children with health needs or illnesses. Within the unit on women's health, students will explore common gynecologic problems and reproductive concerns. The unit on maternity nursing contains content on pregnancy, the birth processes, and the needs of the newborn and family after labor and delivery. Strategies for promotion of health and the
care needs of children with alterations in health status are examined, within a family context. Clinical experiences are provided in primary care, hospital, and community settings where women and children receive health care. Prerequisite: RNU190.

RNU210 Psychiatric/Mental Health Nursing 7 credits
This course focuses on nursing care for patients and families experiencing an altered behavioral response to stress or illness, and/or a psychiatric disorder. Units of content include: therapeutic nurse-patient relationships within a patient-centered care approach, therapeutic care environments, biological bases for behavioral and psychiatric disorders, symptoms of various psychiatric disorders, intervention strategies, mental health issues that commonly co-occur in patients within non-psychiatric health care settings, and the impact of mental health issues on families. Application of the nursing process in psychiatric and non-psychiatric settings will be emphasized, along with advocacy for vulnerable populations experiencing psychosocial or psychiatric problems. Prerequisite: GES100.

RNU215 Professional Transition into Practice 18 credits
This course focuses on the transition from student to practicing nurse. Core competencies for leading and managing the delivery of quality care are emphasized, using recommendations from the Institute of Medicine (IOM) and the Quality and Safety Education in Nursing (QSEN) initiatives. Units of content include: leadership and change concepts and theories, strategies for building effective teamwork in the practice environment, structure and financing of health care delivery systems, patient-centered care, management responsibilities of the nurse, quality improvement, leading evidence-based practice initiatives, health care information management, and ethical use of technology. During the practicum hours associated with this course, students will have the opportunity to explore leadership and management skills as well as patient care skills with groups of patients. Prerequisite: Successful completion of all previous courses.

RNX195 Acute Care of the Adult (X) 5 credits
This course represents the content related to acute nursing care of the adult that was included in the PTI Practical Nursing Certificate Program and can be transferred into the PTI Transition program for LPN to ASN, as partial credit for the associate degree level course on acute care of the adult.

RNX200 Care of Adults with Chronic Illness (X) 7 credits
This course represents the content related to care of adults with chronic illnesses that was included in the PTI Practical Nursing Certificate Program and can be transferred into the PTI Transition program for LPN to ASN, as partial credit for the associate degree level course on care of adults with chronic illness.

RNX205 Nursing Care of the Evolving Family (X) 10 credits
This course represents the content related to maternity nursing and pediatric nursing that was included in the PTI Practical Nursing Certificate Program and can be transferred into the PTI Transition program for LPN to ASN, as partial credit for the associate degree level course on nursing care of the evolving family.

RNX215 Professional Transition into Practice (X) 10 credits
This course represents the content related to leadership and management that was included in the PTI Practical Nursing Certificate Program and can be transferred into the PTI Transition program for LPN to ASN, as partial credit for the associate degree level course on professional transition into nursing practice.

SBT140 Entertainment Systems 3 Credits
The course introduces the student to technologies and techniques used to install and operate various gaming platforms as well as home theater/media room installations. Topics include equipment types, proper cabling and connectivity methods and multi system integration.

SBT141 Applied Communications 4 Credits
This course begins with an introduction to digital electronics concepts and continues with basic communications theory. Students experiment with the telephone system and a variety of cabling techniques. Prerequisite: ELT135.

SBT250 Audio and Video Systems 4 Credits
This course introduces the student to the technologies and techniques used to implement whole-house audio/video distribution systems. Topics include basic design, proper cabling and connectivity methods, system configuration and calibration. Prerequisite: ELT135.

SBT251 Security and Life Safety 6 Credits
This course introduces the student to the design, installation and programming of security systems. Topics include closed circuit television, access control, Fire Alarms and Nurse Call Stations. Prerequisite: ELT135.
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>SBT260</td>
<td>Energy Management and Lighting Controls</td>
<td>6</td>
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<tr>
<td></td>
<td>This course introduces the student to the design,</td>
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<td></td>
<td>implementation and automation of environmental control</td>
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<td></td>
<td>systems. Topics include lighting controls and energy</td>
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<td></td>
<td>management/ climate controls. <strong>Prerequisite:</strong> SBT251</td>
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<tr>
<td>SBT261</td>
<td>Project Management</td>
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<td>This course introduces the student to the duties of</td>
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<td>the project manager. These include customer</td>
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<td></td>
<td>expectations, cost estimation, equipment selection,</td>
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<td>personnel management and project oversight.</td>
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<td>SBT262</td>
<td>Green Technology</td>
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<td></td>
<td>This course is designed as a primer in green building</td>
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<td>- from human and construction impacts on the</td>
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<td>environments to implementing smarter and more</td>
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<td>environmentally acceptable methods of building. It also</td>
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<td>introduces green building rating systems (LEED) that</td>
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<td>evaluates the overall level of a building’s</td>
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<td></td>
<td>environmental performance.</td>
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<td>SGT102</td>
<td>Orientation to Surgical Technology</td>
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<td></td>
<td>This course provides the student with basic surgical</td>
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<td></td>
<td>protocols and procedures. Course components include</td>
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<td>functions and responsibilities of the Surgical</td>
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<td>Technologist, historical development of the Surgical</td>
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<td></td>
<td>Technologist and ethics in the operating room. In</td>
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<td></td>
<td>addition, students will become familiar with the</td>
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<td></td>
<td>structure and design of the operating room as well as</td>
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<td></td>
<td>operating room occupational hazards, safety</td>
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<td></td>
<td>precautions and infection control standards set forth</td>
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<td></td>
<td>by OSHA and the CDC.</td>
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<td>SGT112</td>
<td>Surgical Instrumentation</td>
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<td></td>
<td>This course introduces the student to the basic</td>
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<td></td>
<td>instruments of surgery. The student will prepare</td>
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<td></td>
<td>supplies and equipment for surgery. Topics to be</td>
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<td></td>
<td>covered include classification, safe usage, care,</td>
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<td></td>
<td>decontamination and sterilization of surgical</td>
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<td>instruments. Hands-on practice selecting instruments</td>
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<td>and accessories will be provided.</td>
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<td>SGT114</td>
<td>Foundations of Surgery</td>
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<td></td>
<td>This course introduces the student to the basic</td>
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<td></td>
<td>concepts and procedures of surgical care. Topics to</td>
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<td>be covered include aseptic technique, hand washing,</td>
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<td></td>
<td>the surgical scrub and surgical gowing techniques, as</td>
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<td>well as anesthesia concepts, and medications</td>
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<td>needed for surgical procedures. Lab exercises will be</td>
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<td>conducted to provide hands-on practical experience.</td>
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<td><strong>Prerequisites:</strong> SGT102 and SGT112.</td>
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<tr>
<td>SGT122</td>
<td>Surgical Preparation, Equipment, and Supplies</td>
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<td></td>
<td>In this course the student will become familiar with</td>
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<td>the procedures necessary for patient preparation for</td>
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<td>surgery. It will include preparation of the surgical</td>
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<td></td>
<td>site, draping, wound management, and patient</td>
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<td></td>
<td>psychological and emotional concerns regarding</td>
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<td>surgery. The student will also become familiar with</td>
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<td>the various equipment and supplies used in the</td>
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<td>operating room. Topics to be covered include</td>
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<td></td>
<td>equipment and precautions used in electrosurgery and</td>
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<td>laser surgery, vacuums, robotics used for minimally</td>
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<td></td>
<td>invasive surgery, catheters and drains, and hemostatic</td>
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<td></td>
<td>agents. The students will gain hands-on experience</td>
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<td></td>
<td>with the various machines and equipment used in</td>
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<td>surgery. Students will learn how to properly drape</td>
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<td></td>
<td>the patient prior to surgery. <strong>Prerequisites:</strong> SGT102</td>
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<td></td>
<td>and SGT114.</td>
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<tr>
<td>SGT126</td>
<td>Principles of Surgery</td>
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<td></td>
<td>This course introduces the student to the basic</td>
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<td></td>
<td>concepts and procedures of surgical care. This course</td>
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<td>will integrate microbiology concepts in the surgical</td>
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<td>environment. Topics to be covered include, disposal</td>
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<td>of biohazardous materials, hand washing and scrub</td>
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<td>and gowing techniques, as well as anesthesia concepts</td>
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<td>and medications used in surgery. OSHA and CDC</td>
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<td>guidelines will be stressed. Lab exercises will be</td>
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<td>conducted to provide hands-on practical experience.</td>
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<td><strong>Prerequisites:</strong> SGT114 and SGT122.</td>
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<td>SGT205</td>
<td>Surgical Technology 1</td>
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<td>This course is the first course that will cover the</td>
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<td>specific requirements of the main surgical procedures.</td>
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<td>Surgical procedures to be covered include general</td>
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<td>surgery, gastrointestinal surgery, biliary tract,</td>
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<td>pancreas and spleen surgery, rectal surgery, hernia</td>
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<td>repair, breast and thyroid surgery, laparoscopic</td>
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<td>surgery and surgical stapling. Skills that have been</td>
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<td>previously mastered will be integrated in this</td>
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<td></td>
<td>course. The student will be provided with hands-on</td>
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<td>experience in preparing the necessary surgical trays</td>
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<td>for these procedures and then practice following the</td>
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<td>steps involved in the surgical procedure from</td>
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<td></td>
<td>beginning to end. <strong>Prerequisites:</strong> SGT126.</td>
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<td>SGT225</td>
<td>Surgical Technology 2</td>
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<td>This course is the second course that will cover the</td>
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<td></td>
<td>specific requirements of main surgical procedures.</td>
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<td>Surgical procedures to be covered include obstetrics/</td>
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<td>gynecology surgery, urology surgery, and minimal</td>
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<td>access surgery. Skills that have been previously</td>
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<td>mastered will be integrated in this course. The student</td>
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<td>will be provided with hands-on experience in preparing</td>
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<td>the necessary surgical trays for these procedures and</td>
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<td>then practice following the steps involved in the</td>
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<td>surgical procedures from beginning to end. **</td>
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<td><strong>Prerequisites:</strong> SGT205.</td>
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</table>
SGT235 Surgical Technology 3 4 Credits

This course is the third course that will cover the specific requirements of the main surgical procedures. Surgical procedures to be covered include orthopedic surgery, neurosurgery, and plastic surgery. Skills that have been previously mastered will be integrated in this course. The student will be provided with hands-on experience in preparing the necessary surgical trays for these procedures and then practice following the steps involved in the surgical procedures from beginning to end. Prerequisite: SGT205

SGT242 Surgical Technology 4 4 Credits

This course is the fourth course that will cover the specific requirements of the main surgical procedures. Cardiac, Thoracic and vascular surgical procedures will be covered. Skills that have been previously mastered will be integrated in this course. The student will be provided with hands-on experience in preparing the necessary surgical trays for these procedures and then practice following the steps involved in the surgical procedures from beginning to end. This course will also help prepare the student for the clinical experience by reviewing all previously mastered concepts and by providing the student with First aid and CPR instruction. Prerequisite: SGT225 and SGT235.

SGT252 Surgical Technology 5 4 Credits

This course is the fifth course that will cover the specific requirements of the main surgical procedures. Surgical procedures to be covered include otorhinolaryngologic surgery, ophthalmic, dental, oral and maxillofacial surgery. The student will be provided with hands-on experience in preparing the necessary surgical trays for these procedures and then practice following the steps involved in the surgical procedures from beginning to end. This course will also help prepare the student for the clinical experience by reviewing all previously mastered concepts and applying them to simulated experiences in the surgical technology lab. Prerequisite: SGT225 and SGT235.

SGT260 Clinical Rotation 13 Credits

This course is conducted in a surgical facility and provides students a clinical experience with a variety of perioperative assignments. The student will experience a wide variety of operating room situations where he/she will use the skills learned in the classroom. Under the supervision of the clinical preceptor, the student will take part in surgical procedures and work as a member of the surgical team. Students will complete their clinical rotation at an affiliated site for three eight-hour days per week. Students will be assigned to a specific site according to their abilities and the needs of the affiliated site. No guarantee will be made that the student will be assigned to a specific hospital of their choice. It must be noted that some rotations begin at 6:00 a.m. and none later than 6:45 a.m. Students are responsible for parking and transportation to and from their affiliated site. Pre-requisite: Successful completion of Surgical Technology core classes through term 6; passage of a 10-panel drug screen; completion of PA criminal and child abuse history; completion of physical examination and all required immunizations.

SGT261 Clinical Rounds Review 2 Credits

The purpose of this course is to utilize prior knowledge and experience, as well as construct knowledge related to advanced clinical decision making, as it applies to surgical technology. All clinical documentation including evaluations and case logs will be completed at this time. The students will demonstrate, through their reflections, the process of obtaining a higher order of critical thinking. The students will have the opportunity to share experiences from their Clinical Rotation with the rest of the class to gain an appreciation of multiple perspectives on problems they may have encountered in the operating room. Students will also begin preparation for SGT265 (CST review) by completing brief reviews of previously mastered surgical technology concepts. This class must be taken in conjunction with SGT260.

SGT265 CST Review 2 Credits

The purpose of this course is to prepare the students to sit for the Certified Surgical Technologist Examination at the end of the student internship. The preparation will be completed through 6 weeks of online coursework and 5 weeks of on ground coursework. The online portion of the class will prepare the students by having class discussion and mock CST examinations. The on ground portion of this course will require the students to come into PTI and attend review sessions. The on ground review session will be a combination of structured review of each core course taken and CST review questions through clickers. The final portion of this course will be to sit for the certified surgical technologist exam. Prerequisite: Completion of all core courses and will be taken in conjunction with GSI219, the Surgical Technology Internship.

SSA100 Introduction to Criminology and Criminal Justice 4 Credits

This course describes specific crimes and examines the major theories that attempt to explain the reasons for criminal behavior. The course also examines the organizations that comprise the criminal justice system (including police, courts, and corrections institutions), and defines the roles of these groups within the system.

SSA110 Introduction to Policing 4 Credits
Through this course, students will gain a knowledge of the history of policing and what is involved with being a police officer today. Topics examined will include the role of police officers in today’s society, approaches to police operations, and critical issues in policing, such as stress, ethics, diversity in hiring, and technology in policing.

**SSA115 Introduction to Homeland Security**  
4 Credits

This course is an introduction to the extremely complex nature of terrorism and homeland security. Students will investigate the context, causes, consequences, and responses to the crime of terrorism from a variety of perspectives. Individual, group and organizational factors that shape terrorism and responses to terrorism will be explored. Strategies for reducing the threat of terrorism and its consequences will be examined. The student will also be introduced to the National Incident Management System.

**SSA120 Criminal Procedure**  
4 Credits

This course will show the relationship of law enforcement and individual constitutional rights. Students will define probable cause and study what constitutes a valid arrest, search, seizure, admission, and confession.

**SSA130 Principles of EOC/Dispatch**  
4 Credits

This course prepares the student for the role of a communication specialist/dispatcher. Focus areas include: FCC rules and regulations; basic telecommunications techniques; law enforcement, fire, and emergency medical dispatch; Computer Aided Dispatch; crisis intervention strategies; and professionalism. NIMS protocol is also examined. The student will be introduced to a real-life communication center environment through simulation lab exercises which will be incorporated as a significant component of the course. At the end of the course, the students will sit for the APCO Public Safety Telecommunicator 1 exam.

**SSA135 Criminal Justice and Management**  
4 Credits

This course is designed to provide a comprehensive and thorough discussion of criminal justice administration. The student will be provided with a foundation to examine and to question criminal justice administration from diverse viewpoints. This process allows the student to experience a thorough examination of how criminal justice administrations function in our society and to question the efficiency, effectiveness, and equity in the criminal justice system.

**SSA200 Criminal Investigations**  
4 Credits

This course will provide a practical approach to conducting investigations by instructing students in investigative responsibilities, the methods of conducting investigations for crimes against people and property, and the challenges faced by criminal investigators.

**SSA205 Criminal Law**  
4 Credits

This course deals with what is called substantive criminal law, i.e., crimes. Numerous crimes such as homicide, theft, and conspiracy are examined, and defenses such as self-defense and insanity are scrutinized. A primary focus of the course is the utilization and interpretation of criminal statutes.

**SSA210 Modern Corrections Issues**  
4 Credits

Going beyond the description of the corrections system discussed in Introduction to Criminology and Criminal Justice, this course introduces modern correctional issues, including the role of prisons in prisoner reform, probation and prison alternatives, the prison environment for staff and inmates, parole, and the death penalty debate.

**SSA225 Cyber Crime**  
4 Credits

This course explores cyber crime as an evolving crime problem. Discussions will revolve around technology development, criminal adoption of computers and other forms of information technology for illicit purposes. The subjects studied in this course also provide an introduction to legal issues surrounding e-commerce.

**SSA230 Juvenile Justice**  
4 Credits

During this course, students will study juvenile delinquency trends, the characteristics of juvenile offenders, the relationship of juvenile offenders and the criminal justice system, and the various methods of prevention and treatment.

**SSA260 Security and Loss Prevention**  
4 Credits

Beginning by introducing students to basic loss prevention concepts, this course then presents methods of implementing a complete security program. Topics covered include screening employees, recognizing and handling internal and external threats, buying physical security systems, understanding the relationship between risk management and insurance, and identifying loss prevention means in retail and industry.

**SSA275 Act 235 Certification**  
3 Credits
This course enables students to prepare for and complete Act 235 Certification - Pennsylvania Lethal Weapons Training. This certification is a requirement for individuals who are required to carry a lethal weapon as a condition of employment. Preparation for the certification includes taking a psychological evaluation, fingerprinting, a physical examination, and a criminal background check. This is a pass/fail course and the students will be required to take this course off campus at a Pennsylvania certified Act 235 school.

SSA280  Report Writing For Criminal Justice Professionals  4 Credits

This course is designed to teach students the basic techniques of note taking in the report writing process. The students will analyze and compile data for use in formal reporting in order to gain confidence in report writing. Communicating facts, information and ideas in an effective, simple, and logical sequence will be practiced. The various types of reports and memoranda used in the criminal justice system will be discussed.

SSD152  Introduction to Information Systems  7 Credits

This course introduces students to computer-based information systems through an introduction to programming of Web-based software. Students are introduced to the modern model of the computer in the context of a network. Programs are written in JAVA, an object-oriented language designed in part to write Web-based applications. Students create Web pages and JAVA servlets.

SSD251  Introduction to Computer Systems  4 Credits

This course introduces students to the fundamentals of using and maintaining computer systems in a networking environment. The basic components and functions of the computer and the network are introduced, along with tools and procedures for their operation and maintenance. Prerequisite: SSD152.

SSD301  Object-Oriented Programming and Testing  8 Credits

This course introduces students to problem solving by means of object-oriented design and implementation. Emphasis is on problem analysis and solution design documentation and implementation. Students use commercial software libraries and create Web-centric projects. Programming assignments are carried out in JAVA. Prerequisite: SSD152.

SSD451  User-Centered Design and Testing  6 Credits

This course focuses on human-computer interaction, providing training in the basic skills of task analysis, and interface evaluation and design. Students learn to develop designs that are usable and useful for people. Students learn how to empirically evaluate user interfaces (leading to better ones). Visual Basic is used in programming assignments. Prerequisite: SSD301.

SSD552  Data Structures and Algorithms  7 Credits

In this course, students design and write a variety of programs covering programming techniques applicable to all business disciplines. Lab sessions promote hands-on experience in flowcharting, elementary programming, decision loops, strings, pointers, functions, and subscripted variables. Programming assignments are carried out in C++. Prerequisite: SSD301.

SSD751  Database Systems  7 Credits

This course introduces students to database concepts including database design. Relational data models are emphasized. Students develop client-server applications in JAVA and/or Visual Basic, using commercial database management systems. Example applications include E-commerce systems. Prerequisites: SSD555 and ITP261.

TMP106  Chair Massage/Aromatherapy  3 Credits

This course is designed to introduce and develop the student's ability to perform a chair massage routine utilizing massage techniques in varying amounts of time. Students will discover how to refine their body mechanics to allow for multiple chair massage treatments per day. As an adjunct to the healing process, students will be introduced to aromatherapy, essential oil application, and blending techniques. The course begins with the basics of plants, oils, quality, and safety. Analyzing the impact of oils on the senses, this course will look at the effects of essential oil application to the skin. This course will present the benefits of essential oil application and ways to incorporate this modality into massage services.

TMP115  Structure & Function of the Human Body 1  5 Credits

This course will introduce the structure and function of the human body in sickness and in health. In order to promote a safe and beneficial professional practice, special attention will be paid to indications and contraindications for massage application. Subjects to be covered include body as a whole, integumentary system, bones and bony landmarks and the muscular system. This course incorporates muscle palpation as a direct approach to understanding the origin, insertion and action of the muscles of the upper-body.

TMP117  Pregnancy & Infant Massage  3 Credits

This course is designed to review the physiology and pathology related to the needs of infants and pregnant women. Students will be presented with proper intake procedures and a variety of modalities to meet those specialized needs. Prerequisite: TMP152 Swedish Massage.
TMP122 Clinic 1 1 Credit
This course will provide students with practical hands on experience in a supervised public clinic setting. Students will utilize material covered in first quarter classes to perform support staff duties, such as cashier, table preparation, intake procedures, and greeter. Student clinics will be completed on 4 Saturdays throughout the quarter.

TMP123 Introduction to Massage 5 Credits
This course introduces the student to the concept of professional touch. Included are the history of massage and the identification of the professional, legal and ethical boundaries associated with the therapist’s scope of practice. Students will gain knowledge in accurate record keeping, informed consent, intake and assessment procedures, massage indications and contraindications, endangerment sites and massage tools. Students will learn to create and maintain a safe and hygienic environment for the practice of massage, as well as, communication skills and self-care techniques.

TMP125 Structure and Function of the Human Body 2 5 Credits
In this course, students will continue to learn structure and function of the human body in sickness and in health. In order to promote a safe and beneficial professional practice, special attention will be paid to indications and contraindications for massage application. Subjects to be covered include: anatomy and physiology of the skeletal, digestive, urinary, and reproductive systems. This course incorporates muscle palpation as a direct approach to understanding the structure origin, insertion and action of the lower body muscles.

TMP132 Clinic 2 1 Credit
This course will provide students with practical hands on experience in a supervised public clinic setting. Students will utilize knowledge gained in the prior quarter to provide massage therapy services. Student clinics will be completed on four Saturdays throughout the quarter. Prerequisite: TMP152.

TMP135 Structure and Function of the Human Body 3 5 Credits
This course concludes the study of structure and function of the human body in sickness and in health. Systems to be covered include nervous, endocrine, cardiovascular, respiratory, and lymphatic system. Students will be introduced to basic pharmacology as a consideration to massage therapy.

TMP142 Clinic 3 1 Credit
This course will provide students with practical hands on experience in a supervised public clinic setting. Students will utilize knowledge gained in prior quarters to provide massage therapy services. Student clinics will be completed on four Saturdays throughout the quarter.

TMP152 Swedish Massage 3 Credits
This course introduces the application of a system of structured Swedish massage strokes, touch, pressure and movement of the soft tissues of the human body. Students are introduced to proper body mechanics, table mechanics, sanitary hand washing and equipment cleaning techniques. Students will be introduced to the superficial musculature and bony landmarks encountered during Swedish massage. Students will be able to perform a Swedish massage in varying amounts of time to enhance the health and well-being of the client.

TMP156 Pathology 4 Credits
This course will familiarize students with pathological conditions which are commonly encountered in the field of massage therapy. Students will identify factors that cause and contribute to illness and injury. Students will explore traditional treatment approaches, the benefits of massage, and contraindications for massage therapy. Students will utilize information learned to structure massage sessions accordingly into their practice.

TMP208 Business Ethics 4 Credits
This hybrid course provides the student with knowledge of basic business and ethical concepts needed in the massage therapy profession. Topics include common business practices and structures; advantages and disadvantages of being self-employed; basic principles of accounting and bookkeeping; and federal, state, and local regulations as they apply to massage therapy. Written and verbal communication will be analyzed to enhance student professionalism. Students will learn essentials of writing resumes, cover letters, and thank you letters. Students will continue to explore the professional relationship, and legal and ethical boundaries associated with the massage therapy profession.

TMP222 Medical Massage 3 Credits
This course is designed to review the physiology and pathology related to the needs of clients with medical needs. Students will be presented with a variety of modalities to meet the specialized needs of various populations. Populations explored in this course include clients diagnosed with cancer or HIV/AIDS, clients who are elderly or on hospice and palliative care, massage for clients with physical disabilities and massage for survivors of trauma and abuse.

**TMP228 Clinical Massage**  
3 Credits

This course is designed to teach students assessment techniques in evaluating posture, muscle imbalances, and movement dysfunction patterns. To reinforce the knowledge of kinesiology, students will learn to apply facilitated stretching techniques to muscles/muscle groups. This course will explore theories on stretching and muscle energy techniques designed to treat soft tissue manifestations of the human body. Students will analyze the physiological processes of soft tissue pathologies. Students will reinforce competence by integrating massage and assessment techniques to address soft tissue manifestations throughout the healing process. **Prerequisites:** TMP115, TMP125 and TMP246.

**TMP246 Deep Tissue Massage**  
3 Credits

This course will build upon TMP152 Swedish Massage and enhance massage therapy treatment outcomes and client goals. Deep tissue massage is a technique that involves the integration of a variety of techniques such as myofascial release, trigger point and neuromuscular therapy techniques. Students will apply anatomy, physiology and pathology concepts while practicing deep tissue techniques. Students will develop communication skills to understand and enhance massage therapy treatment outcomes and client goals. This course includes an introduction of deep tissue techniques used to treat the pain caused by myofascial and muscular dysfunction. **Prerequisites:** TMP152 Swedish Massage and TMP115 Structure and Function of the Human Body 1.

**TMP253 Massage Seminar**  
5 Credits

This course is designed to explore the role of the massage therapist within the framework of the healthcare profession. This course will provide assistance to the student in the transition from student to professional massage therapist. Mock clinics, review of practical skills, and licensure exam preparation will enhance student career development. **Prerequisite:** successful completion of all massage therapy courses.

**TTA100 Destinations**  
4 Credits

This course introduces the basic travel concepts required for a student to work in the travel industry. Emphasis is placed on the proper usage of industry reference materials, travel geography, and tourist destinations in the U.S., Canada, Mexico, Central America, and South America.

**TTA113 Dynamics of Tourism**  
4 Credits

The primary objectives are to prepare travel and tourism students for a career selling travel and to provide students with a variety of opinions regarding current trends in the tourism industry. Upon completion of this course students should have a basic understanding of the skills needed to be successful as a travel professional.

**TTA116 Global Distribution Systems 1**  
3 Credits

This course provides complete instruction, demonstration, and hands-on application using the simulated SABRE computer reservation system. Students learn to create, modify, and maintain passenger name records, price various domestic and international itineraries, and automate tickets and complete accurate boarding passes.

**TTA117 Global Distribution Systems 2**  
3 Credits

This course is a continuation of TTA116 Computer Reservation Systems 1. Students continue to learn and practice to create, modify, and maintain passenger name records, price various domestic and international itineraries, and automate tickets and boarding passes. In addition, students learn how to book hotel and car rental accommodations. **Prerequisite:** “C” grade or better in TTA116.

**TTA145 Marketing and Selling the Travel Product**  
3 Credits

This course explores the importance of marketing the travel product. The lectures are presented from the customer's point of view and stress the positive effects of exceptional customer service and sales techniques. Basic marketing and sales principles are analyzed and topics include promotion, sales, products, and pricing.

**TTA225 Tourism and the Corporate Environment**  
4 Credits

This course examines current trends in the corporate travel industry. Study includes corporate travel departments, travel agencies, and the business travelers. Emphasis is placed on the steps taken by a corporate travel agency to acquire commercial business and the services that must be provided to the corporate client.

**TTA230 International Travel**  
4 Credits
This course focuses on international travel patterns, economic trends, and the growth of tourism worldwide. Topics include geography, attractions, and current trends in Europe, Africa, and Asia. Students explore customs, currency, and international protocol.

**TTA255 Travelogue Presentation** 2 Credits

This course covers the skills and materials learned in the core classes of the Hospitality Management Program and the familiarization trip that the students planned and attended. The focus is on project management through presentation skills, budgets, time management, and meeting deadlines. As the final project, the students will present a travelogue to a live audience.

**WEL100 Gas Welding Plate and Pipe** 6 Credits

This course will include acetylene welding of steel with and without filler metal. Both fillet and butt joints in flat and vertical positions will be covered. Students will also learn brazing and silver soldering of steel and copper based alloys. This course will also prepare the students to obtain the skills needed to take and pass the ASME 3 inch pipe schedule 40 in the 6G position.

**WEL110 Metal Cutting and Fabrication** 3 Credits

Students will learn to set-up equipment for oxygen and plasma cutting. They are taught to pierce and make accurate free hand and straight line contour cuts, cut and bevel plate using the semi-automatic cutting machine, and back gouging and removal of defective welds.

**WEL120 Blueprint Reading** 3 Credits

This course will build problem solving skills for mathematical computations needed in the welding industry. Students will develop skills in ratio proportions, use of formulas, graphs, trigonometry, estimating, and billing.

**WEL130 Math for Welders** 2 Credits

This course will build problem solving skills for mathematical computations needed in the welding industry. Students will develop skills in ratio proportions, use of formulas, graphs, trigonometry, estimating, and billing.

**WEL200 Welding Symbols** 2 Credits

This course will enable the student to recognize and interpret welding symbols to be utilized in the welding field.

**WEL210 General SMAW Practices** 6 Credits

This is an intensive courses designed to teach the basic principles of Arc Welding. It consists of classroom training in electricity and metallurgy as it relates to welding, welding symbols and the identification of welded joints. Shop training consists of demonstration and extensive practice with the electrodes commonly used in industry today in the flat, vertical and horizontal overhead positions.

**WEL220 SMAW Equipment and Electrode Identification** 2 Credits

This is an intensive courses designed to teach the basic principles of Arc Welding. It consists of classroom training in various equipment and electrodes used in industry.

**WEL230 General Exotic Metals** 3 Credits

Students will learn to Introductory welding methods and techniques for mild steels, stainless steels, aluminum, copper and silver. Students will perform edge, corner, lap and fillet welds in basic positions. Each student will understand the effect of variables such as: welding current and voltage, shielding gases, different types of Tungsten, and be able to select the correct filler metal.

**WEL310 SENSE Basic Welding Certification** 2 Credits

This course is designed to prepare students for the SENSE Level 1 Certification. Topics covered include: welding procedures, modularized examinations, health and safety information, and quality assurance.