### Subject Area: 04 - Social Sciences and History

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<tr>
<th>Course ID</th>
<th>Course Title</th>
<th>Starting School Year</th>
<th>Ending School Year</th>
<th>Maximum Credit</th>
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<tbody>
<tr>
<td>04162A001</td>
<td>Law Studies</td>
<td>2012</td>
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<tr>
<td>04165A001</td>
<td>Legal System</td>
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Law Studies courses examine the history and philosophy of law as part of U.S. society and include the study of the major substantive areas of both criminal and civil law, such as constitutional rights, torts, contracts, property, criminal law, family law, and equity. Although these courses emphasize the study of law, they may also cover the workings of the legal system.

Legal System courses examine the workings of the U.S. criminal and civil justice systems, including providing an understanding of civil and criminal law and the legal process, the structure and procedures of courts, and the role of various legal or judicial agencies. Although these courses emphasize the legal process, they may also cover the history and foundation of U.S. law (the Constitution, statutes, and precedents). Course content may also include contemporary problems in the criminal justice system.
CTE - State Courses

Subject Area: 10 - Computer and Information Sciences

Course ID: 10202A002  Beginning Digital Graphics
Starting School Year: 2012  Ending School Year:  Maximum Credit: 1.00
Beginning Digital Graphics course provides students with the opportunity to explore the capability of the computer to produce visual imagery and to apply graphic techniques to various fields, such as advertising, TV/video, and architecture. Typical course topics include modeling, simulation, animation, and image retouching.

Course ID: 10004A001  Computer Concepts and Software Applications
Starting School Year: 2011  Ending School Year:  Maximum Credit: 0.50
Computer Concepts and Software Applications is an orientation-level course designed to develop awareness and understanding of application software and equipment used by employees to perform tasks in business, marketing and management. Students will apply problem-solving skills to hands-on, real-life situations using a variety of software applications, such as word processing, spreadsheets, database management, presentation software, and desktop publishing. Students will explore topics related to computer concepts, operating systems, telecommunications and emerging technologies. The development of employability skills, as well as transition skills, will be included in the course as well as an understanding of the ethical considerations that arise in using information processing equipment and gaining access to available databases.

Course ID: 10252A001  Computer Maintenance I
Starting School Year: 2011  Ending School Year:  Maximum Credit: 3.00
This course is designed to provide students with the skills needed to install, setup, configure, test, troubleshoot, and maintain, personal computers and peripherals. Instruction includes assembling, maintaining, and upgrading personal computers. Students learn how to install, upgrade, and troubleshoot various hardware components such as motherboards, hard drives, CD-ROMS, memory, power supplies, video cards, sound cards, and network cards. Students install and configure various desktop operating systems such as Windows, Apple, and Linux. The course includes adding and removing software programs, installing and updating system drivers, creating startup and recovery disk, and updating the BIOS and CMOS. Students learn to conduct preventive maintenance and perform system backups, data transfer, and recovery routines as well as use diagnostic utilities to troubleshoot hardware and software problems. Students also learn how to disassemble, clean, troubleshoot, and reassemble peripherals such as printers.

Course ID: 10252A002  Computer Maintenance II
Starting School Year: 2011  Ending School Year:  Maximum Credit: 3.00
This course builds on the skills introduced in Computer Maintenance I. Students learn how to connect and install multiple computers and peripherals together to create a computer network. Students build, configure, and maintain network servers along with installing and configuring various network operating systems such as Novell, Windows, and Linux. Students learn to use troubleshooting services, system monitoring utilities, and data backup and recovery systems. Other topics include learning how to connect various network components such as servers, computers, and printers together using data cabling, hubs, and switches. Students learn to run, terminate, and troubleshoot data cabling. In addition, students learn how to install and upgrade software across the network, as well as map drives and share resources such as printers, software, and files. The course includes setting up and configuring various network services such as TCP/IP, DHCP, DNS, VPN, terminal services, e-mail, and web services. Students learn how to secure and protect network servers and data as well as setting up and configuring a firewall, intrusion detection system, and encryption software for identifying and preventing potential network attacks.

Course ID: 10102A001  Computer Networking I
Starting School Year: 2011  Ending School Year:  Maximum Credit: 3.00
Computer Networking I is a skill-level course designed to provide students with the skills needed to setup, configure, test, troubleshoot, maintain, and administer a data network using various network operating systems such as Novell, Windows, and Linux. Instruction will include network planning decisions, such as choosing an appropriate network configuration, determining the performance level requirements considering the differences among operating systems, and recommending network interface cards and cabling. Students will also learn how to setup and manage file systems and resources, and network topologies, protocols, and system utilities to efficiently run software applications on a network. Students will learn to use basic operating system commands, install and configure networks, set up user accounts and rights, and establish user security and permissions.
Subject Area: 10 - Computer and Information Sciences

Course ID: 10102A002  Computer Networking II
Starting School Year: 2011  Ending School Year:  
Maximum Credit: 3.00

Computer Networking II is a skill-level course for students who have completed Computer Networking I. Students will continue to learn skills to set up, configure, test, troubleshoot, maintain, and administer a data network using various network operating systems such as Novell, Windows, and Linux. Students will learn to use troubleshooting services, system monitoring utilities, and data backup and recovery systems. Instruction will include setting up and configuring various network services such as TCP/IP, DHCP, DNS, VPN, terminal services, e-mail, content filtering, and web services. Students will learn techniques to secure and protect network servers and data. Students will be introduced to some basic concepts regarding web server configuration. Students will also learn to use standard software tools to determine system vulnerabilities and correct these vulnerabilities by reconfiguring the operating system. Students will diagnose network problems using public domain network sniffers such as Ethereal. Instruction will include setting up and configuring a firewall, intrusion detection system, and encryption software for identifying and preventing potential network attacks.

Course ID: 10152A001  Computer Operations and Programming I
Starting School Year: 2011  Ending School Year:  
Maximum Credit: 3.00

Computer Operations and Programming I is the first of two skill-level courses designed to develop computer programming and program design skills through the use of various programming languages such as Visual Basic, C#, Java, and other object-oriented languages. Students will be exposed to the fundamentals of system analysis and design (e.g. flowcharting, diagramming, system design and planning), and the systems development life cycle. Instruction will include basic programming tools that are common to many programming languages. These may include items such as input/output statements, constants, assignment statements, string and numeric variable types, conditional processing, and branching and looping control structures. Students will learn programming concepts such as counting, averaging, rounding, and generation of random numbers to develop a good programming technique. Students will apply what they learn to create programs and applications that solve real world business related problems. Students will create programs to store, locate and retrieve data.

Course ID: 10152A002  Computer Operations and Programming II
Starting School Year: 2011  Ending School Year:  
Maximum Credit: 3.00

Computer Operations and Programming II is a skill-level course for students who have completed Computer Operations and Programming I. Students will use procedural and object-oriented programming languages such as Visual Basic, C# and Java. Students will learn programming concepts such as inheritance and polymorphism, advanced data handling (pointers, arrays, strings, and files), and common algorithms (recursion, searching and sorting). Students will be able to write, compile, run, test, debug and modify programs and applications that solve real world problems. Problem examples may include tracking inventory, scheduling rooms and facilities, accessing information and performing calculations.

Course ID: 10202A001  Digital Graphics
Starting School Year: 2011  Ending School Year:  
Maximum Credit: 3.00

Digital Graphics course provides students with the opportunity to use the computer to produce visual imagery and to apply graphic techniques to various fields, such as advertising, TV/video, and architecture. Course topics include modeling, simulation, animation, and image retouching.

Course ID: 10005A001  Information Processing I
Starting School Year: 2011  Ending School Year:  
Maximum Credit: 3.00

Information Processing I is a skill-level course that includes the concepts and terminology related to the people, equipment, and procedures of information processing as well as skill development in the use of information processing equipment. Students will operate computer equipment to prepare memos, letters, reports, and forms. Students will create rough drafts, correct copy, process incoming and outgoing telephone calls and mail, and transmit and receive messages electronically. Students will create, input, and update databases and spreadsheets. Students will create data directories; copy, rename, move, and delete files, and perform backup procedures. In addition, students will prepare files to merge, as well as create mailing labels and envelopes from merge files. Students will learn to locate and retrieve information from hard copy and electronic sources, and prepare masters for a presentations using presentation software. Students will apply proper grammar, punctuation, spelling and proofreading practices. Accuracy will be emphasized. Workplace skills as well as communication skills (thinking, listening, composing, revising, editing, and speaking) will be taught and integrated throughout this course.
### Information Processing II

**Course ID:** 10005A002  
**Starting School Year:** 2011  
**Maximum Credit:** 3.00

Information Processing II is a skill-level course for students who have completed Information Processing I. Students will create and update documents using word processing and desktop publishing programs and put together slide shows, speaker notes and handouts using presentation software. Students will revise data in a stored database and use queries to create customized reports. Students will edit and utilize calculation functions in spreadsheets, integrate graphics, spreadsheets, tables, text and data into documents and reports, and create graphs and charts from spreadsheets. Students will learn to conduct research on the internet and/or intranet, prepare and answer routine correspondence, organize and maintain a filing system, maintain an appointment calendar, make travel arrangements, prepare itineraries and expense reports, and prepare and process timesheets. In addition, students will maintain inventory, order equipment and supplies, and perform routine equipment maintenance. Students will apply proper grammar, punctuation, spelling and proofreading practices to documents and reports. Accuracy will be emphasized. Workplace skills as well as communication skills will be taught and integrated throughout this course. A simulated information processing center or workbased learning experience may be used to provide students with the experience of working in the environment of an information processing center.

### Web Page and Interactive Media Development I

**Course ID:** 10201A001  
**Starting School Year:** 2011  
**Maximum Credit:** 3.00

Web Page and Interactive Media Development I is a skill-level course designed to prepare students to plan, design, create and maintain web pages and sites. Students will learn the fundamentals of web page design using HTML, HTML editors, and graphic editors as well as programming tools such as JavaScript. Students will work in a project-based environment to create a working website. Students will learn to create pages, add hyperlinks, make tables and frames, create forms, integrate images, and set styles. Students will use image-editing programs to manipulate scanned images, computer graphics, and original artwork. Instruction will include creating graphical headers, interactive menus and buttons, and visually appealing backgrounds. Students will use hardware and software to capture, edit, create, and compress audio and video clips.

### Web Page and Interactive Media Development II

**Course ID:** 10201A002  
**Starting School Year:** 2011  
**Maximum Credit:** 3.00

Web Page and Interactive Media Development II is a skill-level course for students who have completed Web Page and Interactive Media Development I. Instruction will include using multimedia authoring applications and programming tools such as JavaScript to create a web site that combines text, hyperlinks, images, video, and sound. Instruction will include using hardware and software to capture, edit, create, and compress audio and video clips as well as create animated text, graphics, and images. Other topics will include using tables to align images with text, creating newspaper-style columns, and inserting side menus and call-outs. Students will learn how to use templates, cascading style sheets and interactive elements to enhance web pages. Students will learn to create dynamic forms that include multiple-choice questions, comment boxes, and buttons. Students will learn how to connect to a database and retrieve and write data. Students are encouraged to develop a portfolio project that demonstrates their expertise in areas such as multimedia authoring, web development, audio and video editing, and advanced JavaScript applications to create interactive web pages.
### Subject Area: 11 - Communication and Audio/Visual Technology

#### Audio/Video Production I

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<tr>
<th>Course ID: 11051A001</th>
<th>Audio/Video Production I</th>
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<tr>
<td><strong>Course ID</strong>: 11051A001</td>
<td><strong>Audio/Video Production I</strong></td>
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<tr>
<td><strong>Subject Area</strong>: 11  -  Communication and Audio/Visual Technology</td>
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<td><strong>Starting School Year</strong>: 2011</td>
<td><strong>Ending School Year</strong>: Maximum Credit: 3.00</td>
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This course is designed to provide students with the skills needed for a career in the technical aspects of radio and television broadcasting. Instruction includes camera operations, basic audio and video editing, sound and lighting techniques, and sound mixing. Students learn the operation, maintenance, and repair of video and DVD recording equipment, video/digital cameras, microphones, computers, lighting/grip equipment, and other production equipment used in the video and audio production of television programs. Students also learn to use, maintain, and repair various types of audio recorders, amplifiers, transmitters, receivers, microphones, and sound mixers to record and broadcast radio programs.

#### Audio/Video Production II

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<td><strong>Starting School Year</strong>: 2011</td>
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This course is for students who have completed Audio/Video Production I. In addition to expanding on the activities explored in the first course, students work in a team-based environment to create a variety of video and audio related broadcasts. Instruction includes single and multi camera operations, linear and nonlinear video editing, production and post-production processes, animation graphics, sound mixing, multi-track production, audio editing, and special effects. Students learn how to use digital editing equipment and software to electronically cut and paste video and sound segments together, as well as how to regulate and monitor signal strength, volume, sound quality, brightness, and clarity of outgoing signals. This course also provides students with an understanding of the FCC and other governmental agencies regulations related to radio and television broadcasting.

#### Beginning Audio/Visual Production

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<tr>
<th>Course ID: 11051A003</th>
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<td><strong>Starting School Year</strong>: 2012</td>
<td><strong>Ending School Year</strong>: Maximum Credit: 1.00</td>
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Beginning Audio/Visual Production course provide students with the basic knowledge and skills necessary for television, video, film, and/or radio production. Camera operation, use of graphics and other visuals, lighting, audio techniques, editing, production principles, and career opportunities are typical topics covered within this course.

#### Beginning Graphic Communication

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Beginning Graphic Communication course will teach students to use artistic techniques to effectively communicate ideas via illustration and other forms of digital or printed media. Topics covered may include concept design, layout, paste-up and techniques such as engraving, etching, silkscreen, lithography, offset, drawing, collage and computer graphics.

#### Beginning Photography

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<th>Course ID: 11052A003</th>
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Beginning Photography course provides instruction in the use of conventional and digital cameras and laboratory film processing techniques. Topics covered in the course include composition and color dynamics; contact printing; enlarging; developing film and use of camera meters.

#### Commercial & Advertising Art I

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<tr>
<th>Course ID: 11155A001</th>
<th>Commercial &amp; Advertising Art I</th>
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<td><strong>Starting School Year</strong>: 2011</td>
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This course is designed to provide students with the skills needed for a career in the fields of advertising, commercial art, graphic design, web site development, and graphic illustrator. Students learn to apply artistic design and layout principles along with text, graphics, drawing, rendering, sound, video, and 2D/3D animation integration to develop various print, video, and digital products. Students use hardware and software programs to create, manipulate, color, paint, and layer scanned images, computer graphics, and original artwork. Students use hardware and software to capture, edit, create, and compress audio and video clips. Students use animation and 2D/3D hardware and software to create animated text, graphics, and images. Students apply artistic techniques to design and create advertisements, displays, publications, technical illustrations, marketing brochures, logos, trademarks, packaging, video graphics, and computer-generated media.
### Course ID: 11155A002  Commercial & Advertising Art II

**Starting School Year:** 2011  
**Ending School Year:**  
**Maximum Credit:** 3.00  

This course continues to build on the concepts and skills introduced in Commercial and Advertising Art I. In addition to expanding on the activities explored in Commercial and Advertising Art I, students work in a project-based environment to create a variety of interactive online and CD/DVD-based products such as web sites, catalogs, publications, marketing materials, presentations, and educational/training programs. Students create dynamic web pages and sites using HTML, HTML editors, and graphic editors. Students create graphic sketches, designs, and copy layouts for online content. Instruction includes how to determine size and arrangement of illustrative material and copy, select style and size of type, and arrange layout based upon available space. Students learn how to capture and edit images, sound, and video, and combine them with text and animation. Instruction includes client interviewing skills, product proposal development, and product presentation techniques. Students also learn how to create a product portfolio.

### Course ID: 11052A001  Commercial Photography I

**Starting School Year:** 2011  
**Ending School Year:**  
**Maximum Credit:** 3.00  

This course provides students with experiences related to the photography field including conventional and digital cameras. Planned experiences give students a clear and concise introduction in the following areas: safety and proper housekeeping of the photo studio, photography of visual and communicative discipline, constructing a usable cardboard camera and develop printing, learning basic terms, understanding how film/paper work, proper exposure, working in the darkroom and knowing all necessary darkroom activities, safe use of photo chemicals, using dyes, and mounting and matting a completed photographic image. In addition, students are introduced to photographic terms, using light meters to measure natural and artificial lighting, using various lighting sources, manipulating basic backgrounds with different light sources, conducting shop operations, performing camera work, processing film and performing darkroom work on black and white and color film, printing photographic images, purchasing equipment and supplies, and the selection and use of cameras, film, lenses, accessories, tripods and filters.

### Course ID: 11052A002  Commercial Photography II

**Starting School Year:** 2011  
**Ending School Year:**  
**Maximum Credit:** 3.00  

This course provides learning experiences related to the tools, materials, processes and practices utilized in the photography industry including conventional and digital cameras. Instruction includes arranging photography sessions, selecting and using cameras, film, lenses, and accessories, calculating and setting shutter speed, preparing darkroom equipment, mixing chemicals, processing film both black and white and color, printing photographic images such as enlargements, sandwich negatives, and copying slides. In addition, Commercial Photography II provides students with a better understanding of photographic images and their application in design. Students shoot photographs specifically for design layouts and in the process develop a better visual language, enhancing photo selection and editing skills. Students learn to visualize not only the look of the design, but also the structure and form of the photographs they shoot.

### Course ID: 11002A001  Communication Technology

**Starting School Year:** 2011  
**Ending School Year:**  
**Maximum Credit:** 1.00  

Communication Technology is a course designed to foster an awareness and understanding of the technologies used to communicate in our modern society. Students gain experience in the areas of design and drafting, radio and television broadcasting, computers in communication, photography, graphic arts, and telecommunications.

### Course ID: 11154A001  Graphic Communications I

**Starting School Year:** 2011  
**Ending School Year:**  
**Maximum Credit:** 3.00  

Graphic Communications I provides learning experiences common to all graphic communications occupations. Instruction should include use of color, balance and proportion in design; three-dimensional visualization; sketching; design procedures; layout; selection of type styles; selection of appropriate drawing tools and media; and the use of the computer as a communication tool. Planned learning activities will allow students to become knowledgeable of fundamental principles and methods and to develop technical skills related to the graphic arts industry.
Subject Area: 11 - Communication and Audio/Visual Technology

Course ID: 11154A002 Graphic Communications II
Starting School Year: 2011 Ending School Year: Maximum Credit: 3.00

Graphic Communications II provides learning experiences related to the tools, materials, processes and practices utilized in the printing industry. Instruction is provided in industrial safety; stencil preparation and duplicating equipment operation; print screen preparation and printing; machine typesetting; ink and color preparation; assembly, binding, and trimming operations; layout, digital paste up and copy preparation. In addition the course provides the student with learning experiences in the use of cameras and photographic equipment, development and processing of photographic negatives and prints, negative stripping and related platemaking procedures, photocomposition, photoengraving, lithography, and offset presswork. Use of the computer in graphic arts occupations should be emphasized.
## Subject Area: 12 - Business and Marketing

### Course ID: 12104A002  Accounting II

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<th>Starting School Year:</th>
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Accounting II is a course that builds upon the foundation established in Accounting I. This course is planned to help students to develop deeper knowledge of the principles of accounting with more emphasis being placed on financial statements and accounting records. It is a study of previously learned principles as they apply to the more complicated types of business organizations: partnerships, corporations, branches, etc. The students may become familiar with such specialized fields of accounting as cost accounting, tax accounting, payroll accounting, and others. Some students may choose to do specialized accounting computer applications, and others may elect payroll clerk, data processing computer applications. Simulated business conditions may be provided through the use of practice sets. Skills are developed in the entry, retrieval, and statistical analysis of business data using computers for accounting business applications.

### Course ID: 12104A001  Accounting I

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Accounting I is a course assists students pursuing a career in business, marketing, and management. This course includes planned learning experiences that develop initial and basic skills used in systematically computing, classifying, recording, verifying and maintaining numerical data involved in financial and product control records including the paying and receiving of money. Instruction includes information on keeping financial records, summarizing them for convenient interpretation, and analyzing them to provide assistance to management for decision making. Accounting computer applications should be integrated throughout the course where applicable. In addition to stressing basic fundamentals and terminology of accounting, instruction should provide initial understanding of the preparation of budgets and financial reports, operation of related business machines and equipment, and career opportunities in the accounting field. Processing employee benefits may also be included.

### Course ID: 12152A001  Advanced Marketing

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Marketing—Comprehensive courses focus on the wide range of factors that influence the flow of goods and services from the producer to the consumer. Topics may include (but are not limited to) market research, the purchasing process, distribution systems, warehouse and inventory control, salesmanship, sales promotions, shoplifting and theft control, business management, and entrepreneurship. Human relations, computers, and economics are often covered as well.

### Course ID: 12001A001  Business and Technology Concepts

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This orientation-level course will provide an overview of all aspects of business marketing and management, including the concepts, functions, and skills required for meeting the challenges of operating a business in a global economy. Topics covered will include the various forms of business ownership, including entrepreneurship, as well as the basic functional areas of business (finance, management, marketing, administration and production). Students will be introduced to a wide range of careers in fields such as accounting, financial services, information technology, marketing, and management. Emphasis will be placed on using the computer while studying applications in these careers along with communication skills (thinking, listening, composing, revising, editing, and speaking), math and problem solving. Business ethics as well as other workplace skills will be taught and integrated within this course. This course is not intended to meet the consumer education requirement, but rather to provide preparation for the skill level courses that make up the Business, Marketing and Management occupations programs.

### Course ID: 12054A001  Business Law

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Introduces law and the origins and necessity of the legal system; provides insight into the evolution and development of laws that govern business in our society; develops an understanding of how organization and operation of the legal system impact business; develops an understanding of rights and duties within the business environment; and includes contractual responsibility, protection of individual rights in legal relationships relative to warranties, product liability, secured and unsecured debts, negotiable instruments, agencies, employer-employee relations, property ownership and transfer, landlord and tenant, wills and estates, community property, social security, and taxation.
Business Technology and Procedures is a course that prepares students for entry level employment in a technology-based office setting. Integrated software applications will be included in this course. Instruction will focus on office etiquette, office management, telephone and communications procedures, time management, records management, and proper business behavior and attire. Students will perform clerical duties, create, edit and correct documents, records and files, perform information processing activities (e.g. spreadsheets, database entry, desktop publishing) and prepare documents using presentation software. Students will discuss appropriate procedures for receiving visitors, patients or clients, and organize, schedule and plan meetings. In addition, students will file materials manually and electronically, make travel arrangements, perform financial activities, process mail, transmit messages electronically, and maintain office supplies and equipment. Students will organize and plan office activities, compose and distribute meeting notes and reports, answer routine correspondence, input information from voice recordings; conduct research using the intranet and/or internet, and supervise and train other employees. Students will apply proper grammar, punctuation, spelling and proofreading skills. Accuracy will be emphasized. Students will apply new skills as well as skills learned in other courses to complete a series of realistic office assignments or participate in an office work-based learning experience. Workplace skills as well as communication skills (thinking, listening, composing, revising, editing, and speaking) will be taught and integrated throughout this course.

Entrepreneurship courses acquaint students with the knowledge and skills necessary to own and operate their own businesses. Topics from several fields typically form the course content: economics, marketing principles, human relations and psychology, business and labor law, legal rights and responsibilities of ownership, business and financial planning, finance and accounting, and communication. Several topics surveyed in Business Management courses may also be included.

Fashion Merchandising focuses on the application of research techniques to understand the cultural, environmental, and psychological aspects of textile products as related to the customer needs. This course develops skills to research and apply knowledge of a product for the textile and design industry through hands-on, problem-based learning experiences and projects. Topics include: product knowledge and promotion; industry trends and style; industry specific terminology; marketing campaigns; current technology; and visual merchandising displays. Emphasis is placed on the development of a variety of communication techniques necessary in the promotion of products and the formation of client relationships.

Keyboarding and Formatting is a course designed to develop basic skills in touch keyboarding techniques for entering alphabetic, numeric, and symbol information found on computers and terminals. Students will learn to edit and format text and paragraphs, change fonts, work with headers and footers, cut and paste text, create and use tab keys, create labels, and work with multiple windows. Students will format documents such as letters, envelopes, memorandums, reports, and tables for personal, educational, and business uses. During the second half of the course, major emphasis is placed on formatting documents, improving proofreading skills, and increasing speed and accuracy.

Principles of Marketing courses offer students insight into the processes affecting the flow of goods and services from the producer to the consumer. Course content ranges considerably as general marketing principles such as purchasing, distribution, and sales are covered; however, a major emphasis is often placed on kinds of markets; market identification; product planning, packaging, and pricing; and business management.

Develops understanding of and skill in maintaining accurate records; includes skills used in everyday business activities both for personal and professional use; provides an opportunity to develop skills related to personal financial management as well as budgeting, financial planning, cashier’s records, handling of money, and tasks common to simple office practices.
This course explores the basic principles of marketing such as the creation of concepts, strategies, and the development of marketing plans. Students learn about the components of the marketing mix, target marketing, sponsorship, event marketing, promotions, proposals, and execution of planning. This course emphasizes strong decision-making, critical thinking, and collaborative skills to complete group marketing projects throughout the semester. Marketing introduces students to this exciting field, which includes advertising, consumer research, product development, packaging, and selling. Students will be challenged to create new marketing ideas as they analyze current marketing trends. Students will also explore the legal aspects of these industries. Real life projects allow students to demonstrate their understanding of these areas. This course will examine the impact of marketing in our everyday lives, as well as teach many critical business concepts to ready students for a career in the area of marketing.
### Subject Area: 13 - Manufacturing

<table>
<thead>
<tr>
<th>Course ID</th>
<th>Course Title</th>
<th>Starting School Year</th>
<th>Ending School Year</th>
<th>Maximum Credit</th>
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<td>13207A003</td>
<td>Beginning Welding</td>
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<td>Mechatronics</td>
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**Beginning Machining** course enable students to create metal parts using various machine tools and equipment. Course content may include interpreting specifications for machines using blueprints, sketches, or descriptions of parts; preparing and using lathes, milling machines, shapers, and grinders with skill, safety, and precision.

**Beginning Welding** course enables students to gain knowledge of the properties, uses, and applications of various metals, skills in various processes used to join and cut metals (such as oxyacetylene, shielded metal, metal inert gas, and tungsten arc processes), and experience in identifying, selecting, and rating appropriate techniques. Welding courses often include instruction in interpreting blueprints or other types of specifications.

**Industrial Maintenance I** course is intended to provide students with planned learning experiences and activities that include safety, basic hand and power tools, mathematics, precision measurement, blueprint reading, introduction to electricity, basic carpentry, scaffolding and rigging, and basic welding and cutting. In addition, students are introduced to robotics and other automated manufacturing procedures.

**Industrial Maintenance II** course builds on the skills and concepts introduced in Industrial Maintenance I. This course provides planned learning experiences and activities in safety, advanced mathematics, precision measurement, and blueprint reading. The program also includes instruction in preventative maintenance, automated control systems, automated manufacturing, hydraulic/pneumatic equipment, metal lathe operations, drill press and metal sawing operations, rotating equipment, pipe fitting, and insulation.

**Machine Shop Technology I** course introduces students to the basic mechanical and technical skills common to most fields in the fabrication of metal parts in support of other manufacturing activities. Topics include shop safety, hand and power tool use, the operation and maintenance of precision metal working equipment, precision measurement, quality control, exploring the manufacturing process, instrumentation and blueprint reading.

**Machine Shop Technology II** course builds on the skills and concepts introduced in Machine Shop Technology I. Additional skill-building activities include automated manufacturing, the use of end mills, surface grinders, drill presses, and basic welding procedures.

**Machine Tool Technology/Machinist I** course introduces students to the basic skills and machines needed in precision metal work. Students gain machining skills while working with lathes, milling machines, surface grinders, drill presses, and other equipment. In addition, students learn the basics of blueprint reading, precision measuring, layout, and machining process planning.

**Machine Tool Technology/Machinist II** course provides more in-depth skill development in various types of precision tool operation, especially using mills, lathes, and surface grinders to perform machining tasks. Power cutoff saws and power band saws are also covered. Students also explore the use of computer and numerical controlled machining.

**Mechatronics** course provides students with instruction and experience in components and equipment that use electricity and the power of physical forces. Students gain an understanding of the principles of electricity and mechanics and their application to gears, including hydraulic/pneumatic equipment, cams, levers, circuits, and other devices used in the manufacturing process or within manufactured goods.
Subject Area: 13 - Manufacturing

Course ID: 13055A001  Precision Metal Production I
Starting School Year: 2011  Ending School Year:  Maximum Credit: 3.00
This course offers a planned sequence of learning experiences which provide students with the opportunities to develop competencies needed for employment in a variety of manufacturing-related occupations. This course introduces students to the skills common to many occupations, such as applying safety practices, selecting materials, performing bench work operations, performing precision measurement, performing layouts, performing housekeeping and recordkeeping activities, and operating a variety of tools used for separating, forming, and combining materials.

Course ID: 13055A002  Precision Metal Production II
Starting School Year: 2011  Ending School Year:  Maximum Credit: 3.00
This course is a continuation of Precision Metal Production I and builds on the skills introduced in that course. This course begins to offer students the opportunity to specialize in specific areas of manufacturing such as machine tool set-up and operation, welding, quality control, automated machine set-up and operation, and sheet metal fabrication. Course content includes the following areas: metallurgy and heat treatment of metal, advanced machine set-up and operation, numerical control/computer, numerical control machining, performing supervisory functions and installation, and maintenance and repair of machinery.

Course ID: 13052A001  Production Technology
Starting School Year: 2011  Ending School Year:  Maximum Credit: 1.00
Production Technology is a course designed to foster an awareness and understanding of manufacturing and construction technology. Through a variety of learning activities, students are exposed to many career opportunities in the production field. Experiences in manufacturing include product design, materials and processes, tools and equipment including computers, safety procedures, corporate structure, management, research and development, production planning, mass production, marketing and servicing. In construction, students are exposed to site preparation, foundations, building structures, installing utilities, and finishing and servicing structures.

Course ID: 13205A001  Sheet Metal Technology I
Starting School Year: 2011  Ending School Year:  Maximum Credit: 3.00
This course is designed to introduce students to the Sheet Metal Worker occupation. Students are instructed in areas of safety including hand tool, power tool, ladder and scaffolding. Students are introduced to the planning, layout, and fabrication of sheet metal parts. Students gain knowledge of blueprint reading and sketching to determine sequence and methods of fabrication and assembly of products. In addition, units of instruction include the proper use and maintenance of hand and power tools, metal identification, measuring and layout, metal separating, forming machinery, and basic welding.

Course ID: 13205A002  Sheet Metal Technology II
Starting School Year: 2011  Ending School Year:  Maximum Credit: 3.00
This course is a continuation of and builds on the skills and concepts introduced in Sheet Metal Technology I. In this course students are introduced to precision measurement, power assisted sheet metal forming equipment, constructing ductwork, hand and power tools specifically designed for sheet metal fabrication, sheet metal production equipment, and advanced welding and brazing.

Course ID: 13207A001  Welding Technology I
Starting School Year: 2011  Ending School Year:  Maximum Credit: 3.00
This course assists students in gaining the knowledge and developing the basic skills needed to be successful in welding technology. Units of instruction include arc, TIG and MIG welding, metallurgy, cutting metal using arc, plasma, and oxy-gas. In addition, students learn the basics of blueprint reading, precision measuring, layout, and production process planning.

Course ID: 13207A002  Welding Technology II
Starting School Year: 2011  Ending School Year:  Maximum Credit: 3.00
This course builds on the skills and concepts introduced in Welding Technology I and provides more in-depth skill development in various types of welding including horizontal, vertical, overhead, and circular techniques. Students also explore the use of robotic and automated production welding.
Subject Area: 14 - Health Care Sciences

Course ID: 14299A001  Biomedical Capstone (PLTW)
Starting School Year: 2011  Ending School Year:  Maximum Credit: 3.00
Biomedical Capstone course provides the ability to design and conduct experiments related to the diagnosis, treatment, and prevention of disease or illness. Students apply knowledge and skills to answer questions or to solve problems related to biomedical sciences. Students may work with a mentor or have an advisor from a university, hospital, physician’s office, or industry as they complete their work. Students will be expected to make a presentation of their work to an adult audience that may include representatives from the local community or the school’s PLTW partnership team.

Course ID: 14252A001  Biomedical Sciences (PLTW)
Starting School Year: 2011  Ending School Year:  Maximum Credit: 3.00
Biomedical courses introduce students to the broad field of biomedical science. It provides the study of human medicine, research processes and an introduction to bioinformatics. Students investigate the human body system and various health conditions including: heart disease, diabetes, sickle cell disease, hypercholesterolemia, and infectious diseases.

Course ID: 14201A001  Central Supply Services
Starting School Year: 2011  Ending School Year:  Maximum Credit: 3.00
Central Supply Service course provide students with knowledge and skills related to the procurement, handling, storage, and distribution of sterile goods and equipment. It provides a sequence of organized learning experiences and skills designed to perform tasks that include inspecting, assembling and evaluating equipment and supplies. Perform aseptic techniques in cleaning and sterilizing equipment and supplies under the supervision of a central supply technician. Course components usually include quality assurance, infection control and isolation techniques, medical terminology and processes, decontamination and sterilization, microbiology, and chemistry.

Course ID: 14104A001  Clinical Laboratory Assistant/Phlebotomist
Starting School Year: 2011  Ending School Year:  Maximum Credit: 3.00
In Phlebotomy courses, students acquire knowledge, skills, and experiences related to the drawing of blood and typically learn about such topics as infection control, sterilization practices, medical/hospital procedures and environments, diagnostic procedures, and the process of drawing blood. This course provides a sequence of organized competencies necessary to perform tasks which include laboratory requisitions and reports; care of laboratory equipment; aseptic techniques; basic laboratory mathematics (metrics); handling of specimens; blood collection techniques; and interdepartmental relationships such as introduction to the departments of hematology, urology, serology, bacteriology and others. In addition, students should be introduced to departmental procedures, policies and standards.

Course ID: 14054A001  Dental Assistant
Starting School Year: 2011  Ending School Year:  Maximum Credit: 3.00
The course exposes students to the tools, terminology, and procedures necessary for a career in the dental industry. The course is responsible for preparing materials for impressions and restorations; and for exposing, processing and mounting dental radiographs. The dental assistant maintains infection control according to Occupational Safety and Health Administration (OSHA) and American Dental Association standards. They also prepare tray setups for dental procedures and provide preventative dental patient/client information. The dental assistant is also trained to manage the office. This includes arranging and confirming appointments, greeting patients/clients, maintaining treatment records, mailing statements, receiving payments and ordering supplies.

Course ID: 14101A001  Dental Laboratory Aide
Starting School Year: 2011  Ending School Year:  Maximum Credit: 3.00
The course exposes students to the principals, tools, terminology, and procedures necessary for a career in a dental laboratory. The student is introduced to working with the dentist, dental assistant and dental hygienist in the examination of patients/clients. The student learns to arrange and confirm appointments, greet patients/clients, and maintain treatment records. The students learn to maintain infection control according to Occupational Safety and Health Administration (OSHA) and American Dental Association standards in assisting the dental assistant or dentist in preparing for dental procedures. The dental laboratory aide may also learn to assist the dental laboratory technologist in making, repairing and polishing dentures; constructing crowns or bridges for partially destroyed teeth; and making orthodontic appliances (tooth straightening devices).
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Course ID: 14103A001  Electrocardiograph (EKG) Technician
Starting School Year: 2011  Ending School Year:  Maximum Credit: 3.00

In EKG Technology courses, students acquire the knowledge and skills to perform electrocardiograph activities and learn about the cardiovascular system (including its function, diseases, and rhythms); EKG machinery; and the use of drugs and their effects. This course provides a sequence of organized learning experiences and skills designed to utilize the electrocardiograph machine to record the variation in time and potential of the electric current associated with action of the heart muscle by learning proper electrode sites and placement; quality control; interpersonal relationships; interdepartmental relationships, anatomy and physiology; and observing and reporting. The student learns the competencies needed to perform as an EKG technician in a hospital, clinic or doctor's office under the direction of a physician. These courses usually include general health care topics as well, such as basic anatomy and physiology, patient care, first aid and CPR, identification and use of medical equipment, and medical terminology.

Course ID: 14055A001  Emergency Medical Technician
Starting School Year: 2011  Ending School Year:  Maximum Credit: 3.00

Emergency Medical Technology courses place a special emphasis on the knowledge and skills needed in medical emergencies. Topics typically include clearing airway obstructions, controlling bleeding, bandaging, methods for lifting and transporting injured persons, simple spinal immobilization, infection control, stabilizing fractures, and responding to cardiac arrest. The courses may also cover the legal and ethical responsibilities involved in dealing with medical emergencies.

Course ID: 14059A001  Geriatric Aide
Starting School Year: 2011  Ending School Year:  Maximum Credit: 3.00

Geriatric Aide courses provide students with knowledge and understanding of the processes of adult development and aging. The geriatric aide course is composed of a combination of subject matter and learning activities designed to prepare a person to perform simple tasks involved in the personal care of elderly individuals receiving nursing services. These tasks are performed under the supervision of a licensed practical nurse or registered nurse. Topics covered may include the study of the biological, economic, psychological, social, health and special nutritional needs, fitness and maintenance of body processes, aspects of the aging process, activities of daily living; rehabilitation activities; diagnostic and treatment procedures; patient/client care procedures, and special nursing care needs of the elderly.

Course ID: 14099A003  Health and Safety Skills for Psychiatric Rehabilitation
Starting School Year: 2011  Ending School Year:  Maximum Credit: 3.00

This course should focus on the mental health system and related services, basic CPR, First Aid, infection control, vital signs, nutrition, and safety. It is suggested that the Certified Nursing Assistant course be given at this time as the basic foundation. The student would then become eligible upon successful completion of all of the skills and knowledge for dual certification at the end of course of study.

Course ID: 14002A002  Health Occupation Entry-Level Skill Development
Starting School Year: 2011  Ending School Year:  Maximum Credit: 3.00

The course should include affective, cognitive and psychomotor skills that are common to most health occupations. Some degree of occupational competency can be developed at this level. The units of instruction, activities and skills should be planned and assessed concurrently utilizing the industry or national standards for assessment whenever possible. These units may include diagnostic and therapeutic measures, management functions, transportation and mobility, psycho-social care, anatomy and physiology, administering medications, patients/clients with special needs. Student performance should be learned and practiced in the classroom and laboratory and supervised closely by approved Emergency Medical Services occupations teachers/worksite mentors in a facility through extended campus or clinical experiences. Both extended campus and clinical experiences require written agreements between educational facilities and respiratory health care providers to determine the responsibilities of each agency.

Course ID: 14998A001  Health Occupations Cooperative Education
Starting School Year: 2011  Ending School Year:  Maximum Credit: 3.00

The course provides students with work experience in the health care industry. This course is designed for students interested in pursuing careers in health occupations. Students are released from school for their paid cooperative education work experience and participate in 200 minutes per week of related classroom instruction. Classroom instruction focuses on providing students with job survival skills, career exploration skills related to the job, and improving students' abilities to interact positively with others. For skills related to the job, refer to industry standards of the desired career. Goals are typically set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses may include classroom activities as well, involving further study of the field or discussion regarding experiences that students encounter in the workplace.
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Course ID: 14002A001 Health Occupations Related Skills
Starting School Year: 2011 Ending School Year: Maximum Credit: 1.00
The course provides students with a core of knowledge to the health care industry and helps refine their health care-related knowledge and skills. This core of knowledge will develop the students' cognitive and affective skills in formulating a strong foundation for entry-level skill development. Topics covered usually include (but are not limited to) an overview of health care delivery; patient care, including assessment of vital signs, body mechanics, and diet; anatomy and physiology; identification and use of medical equipment and supplies; medical terminology; hygiene and disease prevention; first aid and CPR procedures; laboratory procedures; and ethical and legal responsibilities.

Course ID: 14002A003 Health Occupations Skill Development
Starting School Year: 2011 Ending School Year: Maximum Credit: 3.00
The course provides a sequence of organized learning experiences and skills to prepare a person to recognize the signs and symptoms of illness and injury; to begin the approved and appropriate life-support procedures, such as cardiopulmonary resuscitation (CPR); to operate emergency vehicles and communications equipment as patients/clients are moved to a hospital, emergency room; and to fill out the required records and reports after a call. This course should include identified skills to prepare the student for working in the emergency medical arena. The course should include skills to prepare the student for a specific health occupation or cluster of closely related occupations. Health occupations allow for instruction in multiple occupations. The student must be 18 years of age to sit for the national exam.

Course ID: 14053A001 Home Health Aide
Starting School Year: 2011 Ending School Year: Maximum Credit: 3.00
The course is composed of a combination of subject matter and learning activities designed to prepare a person to care for individuals within their homes. The student learns competencies needed to perform simple tasks involved in the personal care of ill or handicapped individuals under the direction of the attending physician, registered professional nurse and/or licensed practical nurse. The home health agency assigns a registered nurse to provide continuing supervision of this health care. The home health aide is employed in private homes, hospitals, long term care facilities and health care institutions. Course content relates health care practices and procedures to the home environment, and typically includes patient care, comfort, observing, recording, reporting and safety; process of aging; personal care and daily living activities; family relationships; behavior patterns; home management; the prevention of disease and infection; nutrition and meal preparation; human relations; and first aid and CPR. The student must be a certified nurse assistant before becoming a home health aide.

Course ID: 14251A001 Human Body System (PLTW)
Starting School Year: 2011 Ending School Year: Maximum Credit: 3.00
Human body System courses provide the study of basic human physiology, especially in relationship to human health. A central theme is how the body systems work together to maintain internal balance and good health. Students use data acquisition software to monitor body functions and study body structure.

Course ID: 14254A001 Medical Interventions (PLTW)
Starting School Year: 2011 Ending School Year: Maximum Credit: 3.00
Medical Intervention courses provides student projects that investigate various medical interventions that extend and improve the quality of life including; diagnostics, surgery, bio-nanotechnology, pharmacology, prosthetics, rehabilitation, and life style choices. Possible topics include stem cell research, cochlear implants, insulin pumps, joint and organ replacements, heart pacers, and internal defibrillators.

Course ID: 14102A001 Medical Lab Technician
Starting School Year: 2011 Ending School Year: Maximum Credit: 3.00
Medical Lab Technician courses provide students with the knowledge and skills necessary for employment in health care-related laboratories. This course provides a sequence of organized competencies necessary to perform tasks which include laboratory requisitions and reports; care of laboratory equipment; aseptic techniques; basic laboratory mathematics (metrics); handling of specimens; blood collection techniques; and interdepartmental relationships such as introduction to the departments of hematology, urology, serology, bacteriology and others.

Course ID: 14153A001 Medical Office Procedures
Starting School Year: 2011 Ending School Year: Maximum Credit: 3.00
Medical Office Procedures courses expose students to clerical knowledge, abilities, and procedures as they apply to the medical field. These courses typically include (but are not limited to) topics such as medical transcription, medical insurance, financial accounting, scheduling, and patient record-keeping. Medical terminology and routine medical procedures are covered to provide a context for clerical duties.
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Course ID: 14202A001 Medical Records Assistant
Starting School Year: 2011 Ending School Year: Maximum Credit: 3.00
This course provides a sequence of organized learning experiences and skills designed to prepare an individual to assist other medical record personnel by typing, filing and performing general office duties; organizing, analyzing and technically evaluating health records, coding symptoms, diseases or operations; preparing health data for input into computers; and compiling administrative and health statistics for use by public health officials under the direction of the medical records administrator.

Course ID: 14154A001 Medical Terminology
Starting School Year: 2011 Ending School Year: Maximum Credit: 1.00
Medical Terminology courses students learn how to identify medical terms by analyzing their components. These courses emphasize defining medical prefixes, root words, suffixes, and abbreviations. The primary focus is on developing both oral and written skills in the language used to communicate within health care professions.

Course ID: 14151A001 Medical/Clerical Assisting
Starting School Year: 2011 Ending School Year: Maximum Credit: 3.00
Medical/Clerical Assisting course provides student development in a sequence of organized learning experiences and skills designed knowledge and skills that combine the medical and clerical fields. Students typically develop skills such as patient exam preparation, assessment of vital signs, routine lab procedures, medical transcription, financial accounting, patient and insurance company billing, and record-keeping. This course suggest common clerical duties which include answering phones; greeting patients/clients; handling mail, patient/client data files and medical histories; ordering supplies; dealing with representatives from pharmaceutical companies and medical suppliers; and performing common clinical duties which include sterilizing instruments, preparing patients/clients for examination or treatment; taking temperatures, pulse, respiration and blood pressure; measuring height and weight; performing routine laboratory procedures; and assisting the physician with patient/client examinations and treatment under the direction of the professional medical staff. In addition, the medical assistant should be able to understand the health problems of patients/clients, ethics and legal issues, human relationships and interpersonal relationships.

Course ID: 14063A001 Mortuary Assistant
Starting School Year: 2011 Ending School Year: Maximum Credit: 3.00
The course offers a sequence of planned classroom, laboratory and clinical experience to prepare a person to perform tasks to assist in the embalming and cremation of human remains, to provide funeral and burial services, and to sell funeral equipment to the public. It includes instruction in applicable anatomical, cosmetic and technical procedures; facilities and equipment management; equipment and services marketing; legal requirements; and professional standards. The Mortuary Assistant maintains infection control according to Occupational Safety Health Administration (OSHA) and other national standards.

Course ID: 14051A001 Nursing Assistant
Starting School Year: 2011 Ending School Year: Maximum Credit: 3.00
The course is composed of a combination of subject matter and experiences designed to perform tasks of individuals receiving nursing services. The student learns those competencies needed to perform as a nurse assistant under the direction of the registered nurse. The units of instruction should include the role of the nurse assistant while covering general health care topics; medical terminology; patients/clients and their environment; special feeding techniques; psychological support and, in long term and terminal illness, death and dying (e.g., chronically ill, children, new mothers, and so on); and all other basic nursing skills. Topics covered typically include normal growth and development; feeding, transporting patients, hygiene, and disease prevention; basic pharmacology; first aid and CPR; observing and reporting; care of equipment and supplies; doctor, nurse, and patient relationships and roles; procedure policies; medical and professional ethics; and care of various kinds of patients. In order to have an approved nurse assistant program (one in which the students are eligible to sit for the certifying exam) the program must be approved by the Illinois Department of Public Health.

Course ID: 14052A001 Nursing-LPN
Starting School Year: 2011 Ending School Year: Maximum Credit: 3.00
The course is composed of a combination of subject matter and learning activities designed to prepare a person to perform as a practical nurse under the direction of the physician or professional nurse. LPN courses offer the knowledge and experience needed to provide nursing care for patients of all ages, in various stages of sickness or health, and with a variety of disease conditions. Through classroom, laboratory and clinical experiences the student is exposed to the following units of instruction: interpersonal relationships; communications; physiological, psychological and sociological principles and needs of patients/clients; basic skills; nutrition and special dietary content. Additional topics covered may include community health, nutrition, drug therapy and administration, and mental illness. This program must meet the approval requirements of the Illinois Department Financial and Professional Regulation.
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Course ID: 14063A002  Occupational Therapy Aide
Starting School Year: 2011  Ending School Year:  Maximum Credit: 3.00
This course provides a sequence of organized learning experiences and skills designed to prepare a person to be knowledgeable of the organizational structure of the occupational therapy department; relationships of anatomical structures to normal and abnormal movement (building upon the unit of body systems in an earlier course); pathophysiological conditions resulting from injury and/or disease; terminology; record keeping; interpersonal relationships; first aid; body mechanics, and assist in implementing the plan of therapy for a patient/client as prescribed by a physician as directed by the occupational therapist in a hospital, long-term care facility, retirement home or clinic. This knowledge is necessary to perform as an occupational therapy aide in hospitals, long term care facilities and clinics under the direction of a physical therapy assistant or physical therapist.

Course ID: 14058A001  Optical Technician Assistant
Starting School Year: 2011  Ending School Year:  Maximum Credit: 3.00
Optical Technician Assistant course provide students with the knowledge, ability, and experiences to prepare, assemble, and/or fit corrective lenses prescribed by a physician or optometrist. This course provides a sequence of organized learning experiences and skills designed to prepare a person to assist with tests to determine normal and/or defective vision, prepare and fit eyeglasses and/or contact lenses, administer corrective eye exercises and other treatments which do not require drugs or surgery under the supervision of an ophthalmologist, optometrist or physician. It also includes administrative office duties such as scheduling of patients/clients, maintenance of the patient/client record, and billing. This course provides a sequence of organized learning experiences and skills designed to prepare a person to adapt and fit corrective eyeglasses as prescribed by the ophthalmologist or optometrist. Topics covered may include layout and marking, cutting and chipping, edging and beveling, inspection, alignment, dispensing, and selection of eyewear.

Course ID: 14001A001  Orientation to Health Occupations
Starting School Year: 2011  Ending School Year:  Maximum Credit: 1.00
The course should expose students to the variety of opportunities available within the health care industry (e.g., such as nursing, therapy, vision and dental care, administrative services, and lab technology) which should include classroom and community-based activities. The main purpose of this course is to assist students in further development of their self-concept and in matching personal abilities and interest to a tentative career choice. The suggested course content should provide in-depth information into health occupations careers and trends, the occupational and educational opportunities and the educational, physical, emotional and attitudinal requirements.

Course ID: 14253A001  Pharmacology Technician
Starting School Year: 2011  Ending School Year:  Maximum Credit: 3.00
Pharmacy Technician courses provide a sequence of organized learning experiences and skills designed to prepare the person to input information into the computer, obtain the client's records; file requisitions and prescriptions; check and order supplies; perform interdepartmental communications; use pharmacological terminology; observe drug dispensing, drugs and dosages; understand the Unit Dosage System; and review physician's drug order sheet. All the skills listed above are performed under the supervision of a registered pharmacist. Course topics and experiences enable students to understand medical terminology, keep and maintain records, label medications, perform computer patient billing, perform stock inventory, and order supplies. These courses also emphasize pharmaceutical classification, drug interactions, and interpersonal/communication skills.

Course ID: 14152A001  Pharmacy Assisting
Starting School Year: 2011  Ending School Year:  Maximum Credit: 3.00
Pharmacy Assisting courses emphasize the knowledge and skills necessary to assist a pharmacist or pharmacy technician. Courses topics and experiences enable students to understand medical terminology, keep and maintain records, label medication, perform computer patient billing, perform stock inventory, and order supplies. These courses also emphasize pharmaceutical classification, drug interactions, and interpersonal/communication skills.
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**Physical Therapy Aide** courses provide students with the knowledge and skills necessary to work with patients who need to achieve and maintain functional rehabilitation and to prevent malfunction or deformity. This course provides a sequence of organized learning experiences and skills designed to prepare a person to be knowledgeable of the organizational structure of the physical therapy department; relationships of anatomical structures to normal and abnormal movement (building upon the unit of body systems in an earlier course); pathophysiological conditions resulting from injury and/or disease; terminology; record keeping; interpersonal relationships; first aid; body mechanics; and uses of electricity, hot and cold packs, paraffin, whirlpool, diathermy, microwave, massage assistive and supporting devices, and therapeutic exercises and tractions. The physical therapy aide assists in implementing the plan of therapy for a patient/client as prescribed by a physician. This knowledge is necessary to perform as a physical therapy aide in hospitals, long term care facilities and clinics under the direction of a physical therapy assistant or physical therapist. Topics covered typically include therapeutic exercises and activities (such as stretching and strengthening), how to train patients to perform the activities of daily living, the use of special equipment, and evaluation of patient progress.

**Psychiatric Rehabilitation Skills** course should focus on the mental health system and related services, adult learners and methods for skills training, process model for social and coping skills training, medication management skills, and conducting skills training groups.

**Radiological Technology/Technician** course provides a sequence of organized learning experiences and skills designed to prepare a person to assist the radiographer by transporting patients/clients from the emergency room or nursing unit to the x-ray department, positioning the patient/client, assisting the patient/client to dress and putting the patient/client at ease in unfamiliar surroundings. This course introduces the student to the medical equipment and materials used for diagnostic and therapeutic services under the supervision of a radiation therapist or physician.

**Rehabilitation Aide** course provides a sequence of organized learning experiences and skills to prepare a person to perform tasks involved in the personal and rehabilitative care of patients/clients. The rehabilitation aide concept is the integration of three major interdisciplinary teams that are the basic skills in the areas of nursing, occupational therapy and physical therapy. This health care person can help insure that the approach to the care of the patient/client is consistent regardless of which specialty area is rendering the service. The rehabilitation aide performs under the supervision of a registered nurse, registered physical therapist or registered occupational therapist in rehabilitation clinics or units in hospitals, extended care facilities and long term care facilities. This unit of instruction could be offered after the student has obtained the certified nurse assistant.

**Respiratory Therapy** courses provide students with the knowledge and skills necessary to work with patients who have breathing or other cardiopulmonary difficulties or disorders. This course provides a sequence of organized learning experiences and skills designed for the person to assist in the treatment of patients/clients with heart and lung ailments. Topics covered typically include identifying deficiencies and abnormalities of the cardiopulmonary system, understanding the various methods of therapies, and understanding how to use special equipment. Areas to be included are administration of various types of gases and devices to control temperature, air pressure and humidity; patient/client exercises that will clear fluid from lungs and improve the patient's/client's ability to breathe; and cleaning and sterilizing equipment under the direction of the Respiratory Therapist.

**Sports Management** courses introduce students to the basic principles and techniques for the prevention, recognition, treatment, and rehabilitation of common injuries and illnesses. Students may learn to measure cardiorespiratory endurance, muscular strength and endurance, flexibility, body composition, and blood pressure. Topics covered may include taping and bandaging, proper use of protective padding, treatment modalities, and medical terminology, budgeting, ordering supplies, as well as general operation of a training room facility. More advanced topics may include injury assessment, the phases of healing, and the use of exercise and equipment to help in the reconditioning of injured athletes.
### Subject Area: 14 - Health Care Sciences

#### Course ID: 14056A001 Surgical Technology

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<tr>
<th>Starting School Year: 2011</th>
<th>Ending School Year:</th>
<th>Maximum Credit: 3.00</th>
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</table>

Surgical Technology courses emphasize the care and needs of patients undergoing surgery while covering general health care topics (i.e., patient care, anatomy and physiology, medical terminology, hygiene and disease prevention, first aid and CPR, and laboratory procedures). This course provides a sequence of organized learning activities and skills related to department procedure and policies, interdepartmental relationships, care of surgical equipment, aseptic techniques, handling of specimens, body mechanics and position for surgery, observing and reporting, terminology and safety under the direction of the professionals in the operating room. In keeping with that focus, topics may include operation room materials, tools, and procedures; aseptic surgical techniques; preparation and handling of surgical instruments; efficiency in the operating room; and the roles of various medical personnel who are present during surgery.

#### Course ID: 14099A001 Survey of Psychiatric Rehabilitation

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<tr>
<th>Starting School Year: 2011</th>
<th>Ending School Year:</th>
<th>Maximum Credit: 3.00</th>
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</table>

This course should focus on the mental health system and related services, psychiatric disability and related stigma issues, rehabilitative approaches to psychiatric treatment, case management, co-occurring substance abuse disorders, and public policies relevant to mental illness. The units of instruction should include consumer orientation, community supports and public policy, mental health system, wellness and diversity, functional assessment and treatment planning, vocational rehabilitation, substance abuse and MISA, disability as disease, legal and ethical issues, case management and ACT, knowledge of medications, process model of psychiatric rehabilitation, families, and stigma of mental illness.

#### Course ID: 14203A001 Unit Clerk (Ward Clerk)

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<tr>
<th>Starting School Year: 2011</th>
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Unit Clerk (Ward Clerk) courses provide students with instruction and experiences so that they can manage components of nonpatient care activities in health care facilities. This course provides a sequence of organized learning experiences and skills necessary for a person to perform tasks requiring good communication skills, correct terminology and spelling, and an understanding of policies and rules and regulations regarding visitors, patients/clients, and coworkers. Clerical responsibilities of record keeping, transcribing physicians' orders and requisitions, operating a computer, and using a multiplicity of standard and special chart forms are a necessary part of this occupational training program. Patient/client care activities involving areas of admission, discharge, transfer, death, laboratory listing, etc., are performed under the direction of the professional nurse/unit manager in long term care facilities, hospitals or clinics. Topics covered usually include medical terminology, transcription, and general reception duties and responsibilities; recordkeeping; and stocking medical and office supplies and equipment.

#### Course ID: 14057A001 Vision Care

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<th>Starting School Year: 2011</th>
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Vision Care courses expose students to the tools, terminology, and procedures necessary for a career in the optometric or optic field. Vision Care courses typically include the physics of light and refraction; the anatomy, physiology, and terminology associated with the eyes; identification and use of optometric and/or optical equipment; optical procedures; human relations; and the ethical and legal responsibilities of vision care workers.

#### Course ID: 14099A004 Vocational Rehabilitation and Community Living Skills

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<th>Starting School Year: 2011</th>
<th>Ending School Year:</th>
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This course should focus on the mental health system and related services, supported employment, work as therapy, job coaching, Americans with Disabilities Act, and case management for community living.
Subject Area: 15 - Public, Protective, and Government Service

Course ID: 15152A001  Fire-Fighting I
Starting School Year: 2011  Ending School Year:  Maximum Credit: 4.00
This course is designed to provide students with the skills needed to prevent and extinguish fires, maintain and repair fire service related equipment, provide basic emergency medical treatment, and prepare public service information concerning fires and hazardous materials. Instruction includes the physical characteristics of fire as well as general safety practices, basic fire behavior, and extinguishing principles. Students learn rescue and extrication procedures, types and use of ground ladders, proper ventilation techniques, and appropriate use of various water supply systems, and how to use ropes and tie knots. Students also learn basic emergency medical techniques and practices which include medical legal considerations, terminology, airway management, patient assessment and transportation, and emergency treatment.

Course ID: 15152A002  Fire-Fighting II
Starting School Year: 2011  Ending School Year:  Maximum Credit: 4.00
This course builds on the concepts and skills introduced in Fire-Fighter I. Instruction is provided in the use fire hoses, controlling property loss along with fire control techniques, detection systems, and prevention practices. Instruction includes communication procedures, procedures for operating emergency vehicles, maintaining fire-related equipment and vehicles, and securing and protecting evidence. Students may learn procedures for treating poisonings and allergic reactions, environmental emergencies, and hazardous waste removal, as well as how to treat soft tissue, musculoskeletal, and head and spine injuries.

Course ID: 15051A003  Law Enforcement I
Starting School Year: 2011  Ending School Year:  Maximum Credit: 3.00
This course is designed to prepare students to enter the fields of law enforcement and the criminal justice system. Instruction includes the history of law enforcement and the legal system, report writing and recordkeeping, criminal investigation techniques, and routine police procedures. Students learn how to use communications and dispatch equipment, perform proper search and seizure techniques, conduct basic criminal investigations, and execute correct pursuit and arrest procedures. Instruction also includes patrolling techniques, private security operations, traffic investigations, and community relations.

Course ID: 15051A004  Law Enforcement II
Starting School Year: 2011  Ending School Year:  Maximum Credit: 3.00
This course provides experiences for students in basic investigative techniques for crimes against people and property. Learning activities emphasize the development of more advanced knowledge and skill than those provided in Law Enforcement I. Units of instruction include how to conduct a preliminary investigation and protect a crime scene, collect and preserve physical evidence including dusting latent prints, casting, fingerprint classification, and the use of portable crime laboratory equipment. Students learn how to conduct interviews, complete police reports, use police equipment, and testify in court. Instruction also includes traffic control, personal security, and law enforcement administration.

Course ID: 15051A005  Security I
Starting School Year: 2011  Ending School Year:  Maximum Credit: 3.00
This course is designed to prepare students to enter the fields of law enforcement and the criminal justice system. Instruction includes the history of law enforcement and the legal system, report writing and recordkeeping, criminal investigation techniques, and routine police procedures. Students learn how to use communications and dispatch equipment, perform proper search and seizure techniques, conduct basic criminal investigations, and execute correct pursuit and arrest procedures. Instruction also includes patrolling techniques, private security operations, traffic investigations, and community relations.

Course ID: 15051A006  Security II
Starting School Year: 2011  Ending School Year:  Maximum Credit: 3.00
This course provides learning activities to assist students in understanding the differences and similarities between the criminal justice system and security and protective services, incident response techniques, crime prevention, security operations, and crime in the workplace. Learning activities emphasize the development of more advanced knowledge and skill than those provided in Security I.
## Subject Area: 16 - Hospitality and Tourism

### Course ID: 16052A001  Culinary Occupations I

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<th>Starting School Year:</th>
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This course provides terminology, culinary math, and practical experiences needed for the development of culinary competencies and workplace skills. Safety and sanitation instruction and classroom application will prepare students for an industry recognized sanitation exam. Classroom experiences will develop skills to work in the front of the house, back of the house, and work stations. Additional content may include: event planning, customer service and relations, food service styles, baking and pastry arts, hors d'oeuvres, and breakfast cookery. Students will be provided opportunity training experiences on commercial equipment.

### Course ID: 16055A001  Culinary Occupations II

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<th>Starting School Year:</th>
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Culinary Occupations II places special emphasis for students to develop operational management skills-including design and organization of food service systems in a variety of settings, human relations, and personnel training and supervision. Additional topics include: food cost accounting; taking inventory; advertising; monitoring consumer and industry trends; and individualized mastery of culinary techniques. Training experiences involve equipment and facilities simulating those found in business and industry.

### Course ID: 16054A001  Nutrition and Culinary Arts I

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<th>Starting School Year:</th>
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This course includes classroom and laboratory experiences needed to develop a knowledge and understanding of culinary principles and nutrition for people of all ages. Course content encompass: food service and preparation management using the decision-making process; meeting basic needs by applying nutrition concepts; meeting health, safety, and sanitation requirements; maximizing resources when planning/preparing/preserving/serving food; applying hospitality skills; analyzing nutritional needs in relation to change; and careers in nutrition and culinary arts, including entrepreneurship investigation.

### Course ID: 16054A002  Nutrition and Culinary Arts II

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<th>Starting School Year:</th>
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Nutrition and Culinary Arts II provides principles of application into the hospitality industry, including nutrition, culinary, and entrepreneurial opportunities. Course content includes the following: selection, purchase, preparation, and conservation of food, dietary needs and trends, regional & international cuisine, safety and sanitation, and careers in food service industries. All of these concepts can be interpreted through laboratory experiences.

### Course ID: 16054A003  Nutrition and Wellness Occupations

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This course will concentrate on expanding student’s knowledge and experiences with nutrition concepts, food science, and healthy lifestyles. Nutritional analysis, nutrient functions, food allergies, diet and disease, menu analysis, energy and wellness, meal planning & management, nutritional needs across the life span, impacts of science and technology on nutrition and wellness issues, and food safety and sanitation management are topics covered in this course through theory, projects, and laboratory experiences. Students will gain experience in preparing a variety of communications to teach the importance of nutrition and wellness.
## CTE - State Courses

### Subject Area: 17 - Architecture and Construction

<table>
<thead>
<tr>
<th>Course ID</th>
<th>Course Name</th>
<th>Starting School Year</th>
<th>Ending School Year</th>
<th>Maximum Credit</th>
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<tbody>
<tr>
<td>17007A003</td>
<td>Beginning Cabinetmaking</td>
<td>2012</td>
<td></td>
<td>1.00</td>
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<tr>
<td>17001A001</td>
<td>Beginning Construction</td>
<td>2012</td>
<td></td>
<td>1.00</td>
</tr>
<tr>
<td>17102A005</td>
<td>Beginning Electricity</td>
<td>2012</td>
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<tr>
<td>17009A001</td>
<td>Building Maintenance I</td>
<td>2011</td>
<td></td>
<td>3.00</td>
</tr>
<tr>
<td>17009A002</td>
<td>Building Maintenance II</td>
<td>2011</td>
<td></td>
<td>3.00</td>
</tr>
<tr>
<td>17007A001</td>
<td>Cabinetmaking &amp; Millwork I</td>
<td>2011</td>
<td></td>
<td>3.00</td>
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<tr>
<td>17007A002</td>
<td>Cabinetmaking &amp; Millwork II</td>
<td>2011</td>
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**Beginning Cabinetmaking**
- Provides students with experience in constructing cases, cabinets, counters, and other interior woodwork.
- Students learn how to use various woodworking machines and power tools for cutting and shaping wood.
- This course can cover the different methods of joining pieces of wood, how to use mechanical fasteners, and how to attach hardware.

**Beginning Construction**
- Expose students to the opportunities available in construction-related trades, such as carpentry, masonry, air conditioning/refrigeration, plumbing, and so on.
- Students learn about the processes involved in construction projects and may engage in a variety of small projects.

**Beginning Electricity**
- Course provides a survey of the theory, terminology, equipment, and practical experience in the skills needed for careers in the electrical field.
- Courses typically include AC and DC circuitry, safety, and the National Electrical Code.
- May cover such skills as those involved in building circuits, wiring residential, installing lighting, power circuits, and cables.

**Building Maintenance I**
- This course includes learning experiences and skills in servicing building systems, repair and maintenance of machinery, maintaining plumbing systems, minor electrical repairs, essential heating ventilation and air conditioning system maintenance, painting, and basic carpentry.
- These experiences provide students the opportunity to become knowledgeable in a variety of practices and skills associated with all trades necessary to maintain a building’s daily operations that are repair-related.

**Building Maintenance II**
- Provides learning experiences related to the erection, installation, and maintenance of commercial and residential cabinetry, and the repair and maintenance of stationary woodworking machinery.
- Planned learning activities emphasize the development of more advanced knowledge and skills than those provided in Building Maintenance I.

**Cabinetmaking & Millwork I**
- Introduces students to the basic design and fabrication of residential cabinetry and custom furniture.
- Also exposes students to the millwork and millwright industry.
- Instruction includes safety practices in using hand tools and power equipment.

**Cabinetmaking & Millwork II**
- Provides learning experiences related to the erection, installation, and maintenance of commercial and residential cabinetry, and the repair and maintenance of stationary woodworking machinery.
- Planned learning activities emphasize the development of more advanced knowledge and skills than those provided in Cabinetmaking and Millwork I.
- Offers the student with the knowledge and skills necessary to perform basic cabinetry construction and how it relates to the manufacturing process.
- In addition, more advanced woodworking machine maintenance skills are introduced.
Subject Area: 17 - Architecture and Construction

Course ID: 17003A001  Carpentry I
Starting School Year: 2011  Ending School Year:  Maximum Credit: 3.00
This course is designed to introduce students to the Carpentry/Carpenter occupation. Students are instructed in areas of safety, including hand tool, power tool, ladder, scaffolding and the use of safety harnesses. Students are introduced to the theoretical knowledge needed to lay out rafter, stairs, and basic framing techniques. Students demonstrate knowledge of blueprint reading, including foundations, concrete, floor plans, specification schedules, and electrical, plumbing and mechanical symbols. Students demonstrate entry-level skills in all facets of residential construction. Technology-related mathematics, reading, writing, vocabulary, blueprint reading, and science are integrated throughout the curriculum.

Course ID: 17003A002  Carpentry II
Starting School Year: 2011  Ending School Year:  Maximum Credit: 3.00
This course provides learning experiences related to the erection, installation, maintenance and repair of building structures and related utilities. Students are instructed in areas of safety, including hand tool, power tool, ladder, scaffolding and the use of safety harnesses. Students demonstrate knowledge of exterior trim and finishes, energy conservation in residential construction, and design of stairs and rafter building. Students gain knowledge of planning and zoning regulations and building codes. Students are introduced to estimating both materials and construction costs, and demonstrate basic knowledge in applying drywall materials, stair-building skills, designing and erecting wall partitions, applying roofing materials, and installing common siding and interior finish. Technology-related mathematics, reading, writing, vocabulary, blueprint reading, and science are integrated throughout the curriculum.

Course ID: 17002A001  Construction Trades I
Starting School Year: 2011  Ending School Year:  Maximum Credit: 3.00
This course provides experiences related to the erection, installation, and maintenance of residential buildings and related fixtures. Planned learning activities allow students to understand fundamental principles and methods, and develop technical skills related to masonry, carpentry, and finish work. Instruction includes safety principles and practices, recognition of standard lumber sizes, foundation layout methods, building concepts and procedures, local, state, and national codes, cost estimating, and blueprint reading.

Course ID: 17002A002  Construction Trades II
Starting School Year: 2011  Ending School Year:  Maximum Credit: 3.00
This course provides learning experiences related to the erection, installation, maintenance, and repair of building structures and related utilities. Student technical skill experiences include instruction and activities in safety principles and practices, performing maintenance control functions, joining pipes, building water distribution lines and drains, installing and maintaining plumbing fixtures and systems, installing switch and outlet boxes, light fixtures, service entrances, roughing in and trimming out electrical devices and appliances, preparing foundations and footings, constructing residential chimneys and fireplaces, laying, jointing and pointing brick, and advanced building and construction methods and codes. All learning experiences are designed to allow the student to acquire job-entry skills and knowledge.

Course ID: 17005A001  Drywall Installation I
Starting School Year: 2011  Ending School Year:  Maximum Credit: 3.00
This course provides experiences related to the fastening of drywall panels to the inside framework of residential, commercial, and other buildings, and preparing these panels for painting by taping and finishing joints and imperfections. Planned learning activities allow students to become knowledgeable in fundamental principles and methods. Students develop technical skills related to drywall handling, drywall fastening, drywall taping, and drywall sanding. Instruction includes safety principles and practices, recognition of standard lumber sizes, estimating materials, building concepts and procedures, local state, and national building codes, and blueprint reading.

Course ID: 17005A002  Drywall Installation II
Starting School Year: 2011  Ending School Year:  Maximum Credit: 3.00
This course provides experiences related to the fastening of drywall, Drivit panels and stucco to the interior and exterior framework of residential, commercial, and other buildings, and preparing these panels for painting by taping and finishing joints and imperfections. Planned learning activities allow students to attain knowledge in fundamental principles and methods. Students develop advanced technical skills related to drywall handling, drywall fastening, drywall taping, and drywall sanding. Students are also introduced to the use of Drivit panels and the application of stucco finishes. Instruction includes safety principles and practices, recognition of standard lumber and drywall sizes, estimating materials, building concepts and procedures, local, state, and national building codes, and blueprint reading. All learning experiences are designed to allow students to acquire entry-level job skills and knowledge.
### Electrical Systems I

**Course ID:** 17102A001  
**Starting School Year:** 2011  
**Ending School Year:**  
**Maximum Credit:** 3.00

This course provides experiences that prepare students to apply technical knowledge and skills to install indoor and outdoor residential, commercial, and industrial electrical systems and associated power transmission lines. The program includes instruction in electricity, safety procedures, wiring, insulation and grounding, schematic blueprint interpretation, equipment operation and maintenance, and applicable codes and standards. Specific program content includes but is not limited to electrical wiring, industrial hydraulics, introduction to pneumatic technology, understanding of local and national electrical codes, basic power transmission, and an introduction to motor controls.

### Electrical Systems II

**Course ID:** 17102A002  
**Starting School Year:** 2011  
**Ending School Year:**  
**Maximum Credit:** 3.00

This course builds on the concepts and skills introduced in Electrical Systems I. It provides experiences that prepare students to apply technical knowledge and skills to install indoor and outdoor residential, commercial, and industrial electrical systems, and associated power transmission lines. The program includes instruction in electricity, safety procedures, wiring, insulation and grounding, schematic blueprint interpretation, equipment operation and maintenance, and applicable codes and standards. Content in this course includes program controls, industrial program controls, and quality assurance.

### Electrical Trades I

**Course ID:** 17102A003  
**Starting School Year:** 2011  
**Ending School Year:**  
**Maximum Credit:** 3.00

This course is designed to provide students with instruction and training in areas that prepare them to enter the electrical trades. Areas of instruction include electrical theory, circuit design and operation, the national electrical code, blue print reading, construction blue print interpretation, and test equipment usage. Students plan and organize wiring tasks, and gain practical experience by wiring mock-ups and trainers. Students become familiar with tools, materials, and methods used in residential wiring. Students troubleshoot circuits for faulty operation and make repairs. Specific studies include AC and DC theory, series and parallel circuits, motor and generator theory, motor controls, lighting and appliance wiring, low voltage wiring, and testing and repair.

### Electrical Trades II

**Course ID:** 17102A004  
**Starting School Year:** 2011  
**Ending School Year:**  
**Maximum Credit:** 3.00

This course is a continuation of Electrical Trades I, advancing the basics learned in the first course. The study centers around advancing basic theory, multi-phase electricity, transmission and delivery systems, electronic and advanced motor controls, alarm and sensory systems, light commercial and industrial wiring, and advanced circuit design. Students continue to gain practical skill by working on trainers, mock-ups, and on-the-job projects.

### HVAC I

**Course ID:** 17056A001  
**Starting School Year:** 2011  
**Ending School Year:**  
**Maximum Credit:** 3.00

This course is an introduction to the principles and practices employed in the installation, maintenance, and repair of basic air conditioning and heating systems units. Instruction is provided in safety precautions related to electricity, heating units, rotating machinery, refrigerants, and the use of power tools. Instruction includes basic electrical concepts, circuits, transformers, motors and motor controls, and circuit protection devices. Emphasis is also placed on basic refrigeration principles, gas laws, pressure, fluidics, heat and heat transfer, refrigerants, compressors, and lubrication systems. Activities include experiences in using hand tools, gauges, and test instruments used in cutting, reaming, flaring, swaging, bending, soldering, and brazing copper tubing; evacuating and charging refrigeration systems, and inspecting and testing electrical and air conditioning circuits and component parts.

### HVAC II

**Course ID:** 17056A002  
**Starting School Year:** 2011  
**Ending School Year:**  
**Maximum Credit:** 3.00

This course builds on the foundational skills introduced in HVAC I. Students learn the mechanics and electrical fundamentals needed to work as a HVACR technician. Installation, maintenance, and repair of residential forced air hearing systems, alternative energy sources, hydronic heating systems, heat pumps, and air conditioners are taught.
### Subject Area: 17 - Architecture and Construction

#### Course ID: 17104A001  Industrial Electronics I
**Starting School Year:** 2011  
**Ending School Year:**  
**Maximum Credit:** 3.00

This course introduces students to the skills needed to service, repair, and replace a wide range of equipment associated with automated or instrument-controlled manufacturing processes. Planned learning activities in this course allow students to become more knowledgeable in the fundamental principles and theories of electrical/electronic and hydraulic/pneumatic equipment as applied to instrumentation devices and digitally encoded radio equipment. Instruction also includes safety principles and practices, semi-conductors and transistor theory, electrical parameters and circuits, electronic component function and identification, and the use and care of related hand tools, power tools, and test equipment.

#### Course ID: 17104A002  Industrial Electronics II
**Starting School Year:** 2011  
**Ending School Year:**  
**Maximum Credit:** 3.00

This course provides planned learning activities designed to allow students to gain knowledge and skills in testing, maintaining, and repairing electronic equipment and systems used in the manufacturing industry. Learning activities in this course emphasize the development of more advanced knowledge and skills than those provided in Industrial Electronics I. Skills introduced in this course include instruction in the interpretation of technical sketches, schematics, and circuit diagrams. Additional units of instruction include the identification and causes of equipment malfunctions, the repair and replacement of parts and equipment, the care and use of standard tools, equipment, and specialized instrumentation testing devices.

#### Course ID: 17008A001  Masonry I
**Starting School Year:** 2011  
**Ending School Year:**  
**Maximum Credit:** 3.00

This course introduces students to the development and manufacture of brick and concrete block. Instruction concentrates on learning how to handle the trowel and lay brick to the line accurately. Skills involving the use of additional tools are also introduced at this level, so that students have a working knowledge of a mason's basic tools. In addition, students are introduced to the skills needed for installing ceramic, stone, vinyl and composite flooring as well as ceramic, glass, and stone wall tile.

#### Course ID: 17008A002  Masonry II
**Starting School Year:** 2011  
**Ending School Year:**  
**Maximum Credit:** 3.00

This course is designed to build upon the intermediate skills learned in Masonry I. More time on skill development is provided to acquaint students with a wide range of experiences within the trade. Along with the skills already introduced, students continue to improve their speed and efficiency in laying brick and block to the line. Because of the needs of the building industry, greater emphasis is placed on tuck-pointing, cement finishing, and installing glass block windows.

#### Course ID: 17058A001  Plumbing I
**Starting School Year:** 2011  
**Ending School Year:**  
**Maximum Credit:** 3.00

This course is an introductory level course designed to acquaint students with the basics of plumbing. Tasks introduced in this course include classroom safety, estimating the costs of jobs, joining copper tubing and strip pipes, installing hangars and supports, roughing in water supply lines for bathtubs, water closets, and water heaters, maintaining plumbing systems, using manuals to determine maintenance schedules, brazing pipes, joining pipes of dissimilar material with a variety of couplings, building water distribution line, and installing vents and drains.

#### Course ID: 17058A002  Plumbing II
**Starting School Year:** 2011  
**Ending School Year:**  
**Maximum Credit:** 3.00

Planned learning activities emphasize the development of more advanced knowledge and skills than those provided in Plumbing I. This course provides more time for skill development and to acquaint the student with the requirements of an entry-level position as a plumber. Skills introduced include using manuals to determine maintenance schedules, brazing pipes, joining pipes of dissimilar material with a variety of couplings, installing hangars and supports, building water distribution lines and installing vents and drains.

#### Course ID: 17011A001  Wall Finishing I
**Starting School Year:** 2011  
**Ending School Year:**  
**Maximum Credit:** 3.00

This course provides students with experiences related to the painting and wall covering industry. Introductory experiences consist of finishing both exterior and interior surfaces, mixing, blending, and the proper techniques in applying paints, lacquers, enamels, and varnishes. Students learn to use hand tools in removing old surfaces and preparing new surfaces. Safety and care in handling materials are emphasized in this course. Skills introduced include safety, preparation of surfaces for painting, wall-coverings, concrete finishing, plaster finishing, finishing surfaces, filling holes and cracks, applying primer, and sealing wood surfaces.
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<tr>
<th>Course ID: 17011A002</th>
<th>Wall Finishing II</th>
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This course includes planned learning activities that emphasize the development of more advanced knowledge and skills than those provided in Wall Finishings I. Students are instructed in areas of safety that includes hand tool, power tool, ladder, scaffolding and the use of safety harnesses. Students are introduced to skills in areas such as estimating labor materials, selecting and using spraying equipment, finishing surfaces with wall-coverings, maintaining and repairing of structures, inventory of supplies and equipment, determining basic maintenance procedures for tools and equipment, mixing primer, staining wood, and varnishing wood.
Subject Area: 18  -  Agriculture and Natural Resources

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**Course ID: 18308A001  Agricultural Biotechnology**

Starting School Year: 2011  Ending School Year:  Maximum Credit: 3.00

This course examines the agricultural applications of biotechnology, the use of living organisms to solve problems or make useful products. Applications include technologies used in bioprocessing, cell/tissue culture, genetic and protein engineering. Specific units of instruction include: impacts of biotechnology, genetics, and biotechnology in plant, animal, and microbial science. Improving computer and workplace skills will be a focus. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

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**Course ID: 18201A001  Agricultural Business Management**

Starting School Year: 2011  Ending School Year:  Maximum Credit: 3.00

This course will provide students with the basic knowledge and skills necessary to manage personal finances and develop into a successful entrepreneur and/or businessperson. Instructional units include: business ownership types, starting an agribusiness, managing and operating an agribusiness, financing an agribusiness, managing personal finances, record keeping and financial management of an agribusiness, local, state, and federal taxes, agricultural law, and developing employability skills. Student skills will be enhanced in math, reading comprehension, and writing through agribusiness applications. Improving computer and workplace skills will be a focus. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

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**Course ID: 18203A002  Agricultural Communications**

Starting School Year: 2011  Ending School Year:  Maximum Credit: 3.00

Students will analyze current agricultural issues and determine how they affect people on all sides of the issue. The students then learn and enhance their written and oral communication skills by presenting their views and opinions to the class. Students learn how to arrange and present debates, speeches, and interviews to be effective leaders in today’s society. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

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**Course ID: 18403A001  Agricultural Construction and Technology**

Starting School Year: 2011  Ending School Year:  Maximum Credit: 3.00

This advanced course focuses on the knowledge, hands-on skills, and work place skills applicable to construction in the agricultural industry. Major units of instruction include: personal safety, hand tools, power tools, blue print reading, surveying, construction skills in carpentry, plumbing, electricity, concrete, block laying, drywall and painting. Careers such as agricultural engineers, carpenter, plumber, electrician, concrete and block layers, finishers, safety specialists, and other related occupations will be examined. Improving workplace and computer skills will be a focus. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

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**Course ID: 18998A001  Agricultural Cooperative Education**

Starting School Year: 2011  Ending School Year:  Maximum Credit: 3.00

Agricultural Cooperative Education is designed for junior and senior students interested in pursuing careers in Agriculture. Students are released from school for their paid cooperative education work experience. They participate in 200 minutes per week of related classroom instruction focusing on job survival skills, career exploration skills related to the job, and human relations skills. A qualified agricultural instructor is responsible for supervision and is given 30 minutes per student per week to do so. Written training agreements and individual student training plans are developed and agreed upon by the employer, student and coordinator. The coordinator, student and employer assume compliance with federal, state and local laws and regulations. The coordinator also needs to have taken 6 semester hours of organization and administration of cooperative education. The course content includes the following broad areas of emphasis: further career education opportunities, planning for the future, job seeking skills, personal development, human relationship, legal protection and responsibilities, economics of the job, organization and job termination. (NOTE: In schools with insufficient numbers to justify a stand alone Agricultural Cooperative Education course, Interrelated Cooperative Education with the same general requirements may be substituted.)
Subject Area: 18  -  Agriculture and Natural Resources

Course ID:  18449A001  Agricultural Machinery Service
Starting School Year: 2011  Ending School Year:  Maximum Credit: 3.00
This comprehensive machinery service course concentrates on the following areas: using service manuals, electrical applications for agricultural equipment, fundamentals of multi-cylinder engines, reconditioning and repairing agricultural equipment, assembling and adjusting agricultural equipment, organization and management of agricultural machinery dealerships, human relations, and sales techniques. Careers such as agricultural equipment salesperson, mechanic, parts manager, sales manager, service technician, and other related occupations will be examined. Improving workplace and computer skills will be a focus. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

Course ID:  18402A001  Agricultural Mechanics and Technology
Starting School Year: 2011  Ending School Year:  Maximum Credit: 3.00
This course will concentrate on expanding student’s knowledge and experiences with agricultural mechanics technologies utilized in the agricultural industry. Units of instruction included are: design, construction, fabrication, maintenance, welding, electricity/electronics, internal combustion engines, hydraulics, and employability skills. Careers of agricultural construction engineer, electrician, plumber, welder, equipment designer, parts manager, safety inspector, welder, and other related occupations will be examined. Improving workplace and computer skills will be a focus. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

Course ID:  18401A002  Agricultural Metal Fabrication
Starting School Year: 2012  Ending School Year:  Maximum Credit: 3.00
This course will emphasize the development of basic welding and metalworking skills necessary to succeed in agricultural careers in the agricultural metal fabrication industry. Topics of instruction included are: metal identification and properties, metal preparation, use of oxy-acetylene torch, plasma cutting and cutting operations, arc welding, MIG welding, TIG welding, and project design and construction. Improving workplace and computer skills will be a focus. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

Course ID:  18202A001  Agricultural Sales and Marketing
Starting School Year: 2011  Ending School Year:  Maximum Credit: 3.00
This course is designed to develop student knowledge and skills in agricultural sales and marketing, commodity marketing, agricultural economics, and international agriculture. Instructional units include: successfully starting an agribusiness, developing a marketing plan, pricing, advertising, and selling products and services, communicating with customers, applying commodity trading techniques, basic economic principles, the international agribusiness economy, and agricultural career opportunities. Student skills will be enhanced in math, reading comprehension, communications, and writing through agribusiness applications. Improving computer and workplace skills will be a focus. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

Course ID:  18051A003  Agronomy
Starting School Year: 2012  Ending School Year:  Maximum Credit: 3.00
This course is designed to provide students with the knowledge and skills necessary for future employment in the agronomy or related industries. Major units of instruction include scientific method, cellular biology, genetics, biotechnology, soil classifications, soil erosion and management, soil fertility, plant classification, plant anatomy and physiology, plant propagation, plant growth, integrated pest management, grain, oil, forage, sugar, and fiber crop production methods, grain quality, grain storage, and grain transportation. Applied science and math skills and concepts will be stressed throughout the course as they relate to each area. Improving computer and workplace skills will be a focus. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.
Subject Area: 18 - Agriculture and Natural Resources

Course ID: 18101A002 Animal Science
Starting School Year: 2012 Ending School Year: Maximum Credit: 3.00
This course will develop students’ understanding of the livestock (beef, dairy, sheep, goats, and swine), poultry, and large (equine) animal industry. Topics of instruction include scientific investigations, genetics, animal anatomy and physiology, animal nutrition, animal reproduction, animal health, and meat science. Improving computer and workplace skills will be a focus. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

Course ID: 18306A001 Aquacultural Science and Technology
Starting School Year: 2011 Ending School Year: Maximum Credit: 3.00
This course is designed to develop student knowledge and skills in the area of aquacultural science and technology. Instructional units include basic studies of aquacultural species; reproduction processes, genetics, nutrition and health in aquacrops; ecological balances; and environmental requirements of aquatic plants and animals. Water quality, chemical and temperature analyses will be conducted for a variety of aquacrops. Individual and group experimentation and student research project(s) are required for satisfactory completion of this course. Careers to be examined include fish hatchery technician, production manager, fish nutritionist, and researcher. Improving computer and workplace skills will be a focus. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

Course ID: 18401A001 Basic Agricultural Mechanics
Starting School Year: 2011 Ending School Year: Maximum Credit: 1.00
In this course, theory and hands-on experiences provide opportunities for students to develop basic knowledge and skills in agricultural mechanics. Instructional areas include the basic fundamentals of maintaining and repairing small gasoline engines, basic electricity, welding, construction, cold metal work, and operating agricultural equipment safely. Improving workplace and computer skills will be a focus. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

Course ID: 18003A001 Basic Agricultural Science
Starting School Year: 2011 Ending School Year: Maximum Credit: 1.00
This course builds on basic skills and knowledge gained in the Introduction to the Agricultural Industry course. Major units of instruction include agricultural research, soil science, advanced plant science, biotechnology, advanced animal science. Applied science and math skills and concepts will be stressed throughout the course as they relate to each area. Improving computer and workplace skills will be a focus. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

Course ID: 18052A001 Basic Horticultural Science
Starting School Year: 2011 Ending School Year: Maximum Credit: 1.00
This course is designed to introduce students to the horticulture industry and provide them with basic plant science knowledge that can be further developed in advanced horticulture courses. Major units of instruction include horticulture research, horticultural careers, plant anatomy, seed germination, plant propagation, growing media, pest management, hydroponics, identifying horticultural plants, growing greenhouse crops, and floral design. Improving computer and workplace skills will be a focus. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

Course ID: 18101A001 Biological Science Applications in Agriculture - Animals
Starting School Year: 2011 Ending School Year: Maximum Credit: 3.00
This course is designed to reinforce and extend students understanding of science by associating scientific principles and concepts with relevant applications in agriculture. Students will examine major phases of animal agriculture and specific biological science concepts that govern management decisions in the animal industry. Topics of study are in the areas of growth and development of animals – embryology, ethology, nutrition, immunity systems, and processing animal products – preservation, fermentation, and pasteurization. The course will be valuable preparation for further education and will increase the relevance of science through the applied setting of agriculture by enhancing literacy in science and the scientific process. Improving computer and workplace skills will be a focus. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.
### Subject Area: 18 - Agriculture and Natural Resources

#### Course ID: 18051A002  **Biological Science Applications in Agriculture - Plants**

Starting School Year: 2011  
Ending School Year:  
Maximum Credit: 3.00  

This course is designed to reinforce and extend students’ understanding of basic scientific principles and concepts related to agriculture. Students will examine major phases of plant growth and management in agriculture and the specific biological science concepts that govern management decisions. Topics of study are in the areas of initiating plant growth – germination, plant sensory mechanisms, enzyme action, absorption, and managing plant growth – photosynthesis, respiration, translocation, metabolism, and growth regulation. The course will be valuable preparation for further education and will increase the relevance of science through the applied setting of agriculture by enhancing literacy in science and the scientific process. Improving computer and workplace skills will be a focus. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

#### Course ID: 18053A001  **Greenhouse Production & Floral Design**

Starting School Year: 2011  
Ending School Year:  
Maximum Credit: 3.00  

This course focuses on the greenhouse management, floral design and related segments of the horticulture industry. Major units of study include floriculture plant identification, greenhouse structures, and the culture of greenhouse crops. Also included are care and handling of cut flowers, principles of art applied to floral design, and the mechanics of floral design. Agribusiness units will be introduced in merchandising, advertising, sales, and operating a retail floral business. Improving computer and workplace skills will be a focus. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

#### Course ID: 18054A001  **Environmental Science**

Starting School Year: 2011  
Ending School Year:  
Maximum Credit: 3.00  

This course examines the relationship of agriculture and the environment. The impact of plant and animal production practices on the environment and the adoption of practices leading to improved air, land, and water quality are investigated. Areas of emphasis include: types of ecosystems, management of waste, chemical use, soil conservation, land uses and regulations, and water and air quality. Encouraging students to be conscious and concerned about the environment and recognizing the need to conserve the environment and its resources will be a theme throughout. Careers of environmental technicians, soil and water conservationists, monitoring field technicians, land surveyor, and related occupations will be examined. Improving computer and workplace skills will be a focus. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

#### Course ID: 18051A001  **Food Science Technology**

Starting School Year: 2011  
Ending School Year:  
Maximum Credit: 3.00  

This course provides learning experiences in food science and safety which allow students to apply scientific knowledge and processes to practices used in the development and preservation of food products. Issues of food science and safety are examined from a scientific and technological perspective. Students critically analyze information to evaluate and draw conclusions on the appropriate use of technology to implement food science and safety practices. Units of instruction include: principles of food preservation, food processing, biochemistry of foods, and food selection and consumer health. Careers to be examined include meat inspector, quality control technician, food processor, and sanitation supervisor. Students will use scientific and technological information about food science and safety as a part of developing career plans and personal viewpoints on societal issues concerning the development and preservation of food products. Improving computer and workplace skills will be a focus. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

#### Course ID: 18053A001  **Greenhouse Production & Floral Design**

Starting School Year: 2011  
Ending School Year:  
Maximum Credit: 3.00  

This course offers instruction in both the greenhouse production and landscape areas of horticulture. Units of study include plant identification, greenhouse management, growing greenhouse crops, landscape design, installation, and maintenance, horticulture mechanics, nursery management, and turf production. Agribusiness units will cover operating a horticultural business, pricing work, advertising, and sales. Improving computer and workplace skills will be a focus. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.
### Introduction to the Agricultural Industry

**Course ID:** 18001A001  
**Starting School Year:** 2011  
**Ending School Year:**  
**Maximum Credit:** 1.00  

This course provides an opportunity for students to learn how the agricultural industry is organized; its major components; the economic influence of agriculture at state, national and international levels; and the scope and types of job opportunities in the agricultural field. Basic concepts in animal science, plant science, soil science, horticulture, natural resources, agribusiness management, and agricultural mechanics, will be presented. Improving computer and workplace skills will be a focus. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### Landscaping & Turf Management

**Course ID:** 18054A001  
**Starting School Year:** 2011  
**Ending School Year:**  
**Maximum Credit:** 3.00  

This advanced course focuses on the landscape, nursery, and turf segments of the horticulture industry. Units of student instruction include: identifying landscape plants, designing landscape plans, hardscape construction techniques, and installing landscape plants. Also included are nursery production, turfgrass production, small engine repair, and maintenance of existing landscapes. Agribusiness units will cover calculating prices for work, managing a horticulture business, advertising, and sales. Improving computer and workplace skills will be a focus. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### Natural Resources Conservation and Management

**Course ID:** 18504A002  
**Starting School Year:** 2011  
**Ending School Year:**  
**Maximum Credit:** 3.00  

This course develops management and conservation skills in understanding the connection between agriculture and natural resources. Student knowledge and skills are developed in: understanding natural resources and its importance; fish, wildlife, and forestry management and conservation; and exploring outdoor recreational enterprises. Hunting and fishing as a sport, growing and managing tree forests, and outdoor safety education will be featured. Career exploration will be discussed including: park ranger, game warden, campground manager, forester, conservation officer, wildlife manager, and related occupations. Improving computer and workplace skills will be a focus. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### Physical Science Applications in Agriculture

**Course ID:** 18449A002  
**Starting School Year:** 2011  
**Ending School Year:**  
**Maximum Credit:** 3.00  

This course is designed to reinforce and extend students understanding of physical science and the scientific process by associating scientific and math principles and concepts with relevant applications in agriculture. Topics of study are in the areas of scientific investigations, environmental/natural resource systems, agricultural production systems, agricultural structural systems, energy and power systems, agricultural mechanics and machine systems, and food processing systems. The course will be valuable preparation for further education and will increase the relevance of science through the applied setting of agriculture by enhancing literacy in science and the scientific process. Improving computer and workplace skills will be a focus. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### Physical Science Applications in Agriculture II

**Course ID:** 18449A003  
**Starting School Year:** 2011  
**Ending School Year:**  
**Maximum Credit:** 3.00  

This course is designed to reinforce and extend students understanding of physical science and the scientific process by associating scientific and math principles and concepts with relevant applications in agriculture. Topics of study are in the areas of scientific investigations, environmental/natural resource systems, agricultural production systems, agricultural structural systems, energy and power systems, agricultural mechanics and machine systems, and food processing systems. The course will be valuable preparation for further education and will increase the relevance of science through the applied setting of agriculture by enhancing literacy in science and the scientific process. Improving computer and workplace skills will be a focus. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.
Course ID: 18105A001  Veterinary Technology

Starting School Year: 2011

This course will develop students’ understanding of the small and companion animal industry, animal anatomy and physiology, animal ethics and welfare issues, animal health, veterinary medicine, veterinary office practices, and animal services to humans. Career exploration will focus on veterinarian, veterinary lab technicians, office lab assistant, small animal production, research lab assistant, and animal nutrition lab technician. Improving computer and workplace skills will be a focus. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.
### Course ID: 19102A001 Barbering I
**Starting School Year:** 2011  
**Ending School Year:**  
**Maximum Credit:** 3.00
This is the first year of a two year program in Barbering. The barbering program must be approved and licensed by the Illinois Department of Financial and Professional Regulations, Division of Professional Regulation and meet all state and federal regulations. This course offers students curriculum in both theory and practice in the following areas as they relate to the practice of barber science and art: anatomy; physiology; skin diseases; hygiene and sanitation; barber history; barber law; hair cutting and styling; shaving, shampooing, and permanent waving; massaging; and barber implements as they relate to the Barber, Cosmetology, Esthetics, and Nail Technology Act. Knowledge, skills, and activities completed in this course will help prepare students for Barbering II, while earning hours towards licensure.

### Course ID: 19102A002 Barbering II
**Starting School Year:** 2011  
**Ending School Year:**  
**Maximum Credit:** 3.00
This is the second year of a two year program in Barbering. The barbering program must be approved and licensed by the Illinois Department of Financial and Professional Regulations, Division of Professional Regulation and meet all state and federal regulations. It offers advanced theoretical and practical skill development to prepare students for the barbering license exam. Training will cover at a minimum: anatomy; physiology; skin diseases; hygiene and sanitation; barber history; barber law; hair cutting and styling; shaving, shampooing, and permanent waving; massaging; bleaching, tinting, and coloring; and barber implements as they relate to the Barber, Cosmetology, Esthetics, and Nail Technology Act, as well as labor and compensation laws. Knowledge, skills, and activities completed in Barbering I and II will prepare students to take the licensure exam and progression to obtain the 1500 hours of study in barbering.

### Course ID: 19055A001 Care and Learning Services Management
**Starting School Year:** 2011  
**Ending School Year:**  
**Maximum Credit:** 3.00
This course emphasizes the skills associated with the administration of the infant, child and adult care facilities and education centers. Skills, strategies and issues related to caring for infants and special needs children and adults, where applicable, are included. Emphasis is placed on career opportunities, communication skills, human relations and the service needs of clients in the occupational area. The major learning experiences will involve actual work with children and/or adults in facilities simulating those found in the workplace/industry, and discussion of the situations and problems that arise during the learning experiences. State licensing and certification requirements and regulations related to all-aspects of care and education are stressed throughout the course. Careers in the occupational area will be investigated, including entrepreneurship.

### Course ID: 19054A001 Care and Learning Services Occupations
**Starting School Year:** 2011  
**Ending School Year:**  
**Maximum Credit:** 3.00
This course provides students with information and practical experiences needed for the development of competencies related to child/adult care, day care, and other education services occupations. Laboratory experiences, either in a school-based or worksite learning facility, are included throughout the class. Students meet standards in developing programs and assisting with children's and/or adult's activities. Classroom study includes the philosophy and management of care centers and the state and local regulations governing care-giving operations. The learning experiences will involve working with children/adults simulating those found in business and industry, as well as preparation for developing and facilitating these activities.

### Course ID: 19052A001 Child Development and Parenting
**Starting School Year:** 2011  
**Ending School Year:**  
**Maximum Credit:** 1.00
Child Development and Parenting addresses the knowledge, skills, attitudes, and behaviors associated with supporting and promoting optimal growth and development of infants and children. The focus is on research-based nurturing and parenting practices and skills, including brain development research, that support positive development of children. Students will explore opportunities in human services and education-related careers and develop a career portfolio.

### Course ID: 19101A001 Cosmetology I
**Starting School Year:** 2011  
**Ending School Year:**  
**Maximum Credit:** 4.00
The Cosmetology program must be approved and licensed by the Illinois Department of Financial and Professional Regulations, Division of Professional Regulation and meet all state and federal regulations. Cosmetology I provides introduces students to the requirements to become a licensed cosmetologist. It offers students instruction in both theory and practical application in the following areas: tools and their use, shampoo, understanding chemicals and use, types of hair, sanitation, hygiene, skin diseases and conditions, anatomy and physiology, electricity, ethics, nail technology and esthetics as they relate to the Barber, Cosmetology, Esthetics, and Nail Technology Act. Knowledge, skills, and activities completed in this course will help prepare students for Cosmetology II, while earning hours towards licensure.
### Course ID: 19101A002  Cosmetology II
**Starting School Year:** 2011  
**Ending School Year:**  
**Maximum Credit:** 4.00

The Cosmetology program must be approved and licensed by the Illinois Department of Financial and Professional Regulations, Division of Professional Regulation and meet all state and federal regulations. Cosmetology II will build upon the knowledge and skills attained in Cosmetology I and will provide instruction, which may be a combination of classroom instruction and hands on experience in the following areas: practical chemical application/hair treatment, hair styling/hair dressing, and shop management, sanitation and interpersonal relations as they relate to the Barber, Cosmetology, Esthetics, and Nail Technology Act, as well as labor and compensation laws. Instruction may also include instruction in nail technology, esthetics, individualized skill development, and career planning. This course offers a curriculum of advanced theoretical and practical skill development to prepare students for the cosmetology licensure examination and progression to obtain the 1500 hours of study in cosmetology.

### Course ID: 19153A001  Early Childhood Education
**Starting School Year:** 2011  
**Ending School Year:**  
**Maximum Credit:** 3.00

This course prepares students to guide the development of young children in an educational setting through classroom and job shadowing experiences. Course content includes child development, care, and education issues. Project-based learning experiences include planning and implementing developmentally appropriate activities, basic health and safety practices, and legal requirements of teaching young children. Students will research the requirements of early childhood education careers and develop/expand their career portfolio.

### Course ID: 19152A001  Educational Methodology
**Starting School Year:** 2011  
**Ending School Year:**  
**Maximum Credit:** 3.00

This course provides opportunity for students to develop skills to teach and guide others. Coursework includes opportunity for students to create and develop teaching objectives, design lesson plans, and experience teaching in a controlled environment. Students examine and practice teaching strategies, learning styles, time management and planning strategies, presentation and questioning skills, classroom management, and evaluation techniques. Students will explore opportunities in education careers and develop/expand their career portfolio.

### Course ID: 19206A001  Facilities Planning and Management Services
**Starting School Year:** 2011  
**Ending School Year:**  
**Maximum Credit:** 3.00

This course focuses on strategic workplace and facility planning and prepares individuals to function as facility and event managers and workplace consultants. Instruction includes the following: principles of aesthetic and functional design; environmental psychology and organizational behavior; real estate planning; principles of occupational health and safety; event planning and management; operations management; and applicable regulatory and policy issues.

### Course ID: 19204A001  Fashion, Apparel, and Textile Services Occupations
**Starting School Year:** 2011  
**Ending School Year:**  
**Maximum Credit:** 3.00

This course prepares students for employment and higher education programs of study related to the broad spectrum of careers encompassed in fashion, apparel, and textile industries. This course provides students with opportunities to: analyze the influences of social, cultural, and environmental diversity in the fashion, apparel, and textile industry; investigate applicable regulatory and policy issues; assess product quality; develop a design portfolio; refine and develop industry skills necessary to employment in fashion, apparel, and/or textiles; model proper safety procedures; communicate with potential customers/clients using industry terminology; perform operational functions; and research current industry employment opportunities, including the investigation of entrepreneurship.

### Course ID: 19151A001  Foundations to Teaching
**Starting School Year:** 2011  
**Ending School Year:**  
**Maximum Credit:** 3.00

This course introduces students to the principles underlying teaching and learning, responsibilities and duties of teachers, and strategies and techniques to deliver knowledge and information. A combination of classroom and field experiences will enable the student gain skilled knowledge and understanding of the education profession. Course content includes projects to develop an understanding of the learner and the learning process, instructional planning, the learning environment, assessment and instructional strategies, career opportunities in the field of education, and Illinois regulations and licensing requirements.
### Subject Area: 19 - Human Services

#### Course ID: 19053A001 Human Development and Family Wellness

- **Starting School Year:** 2011
- **Ending School Year:**
- **Maximum Credit:** 1.00

This course focuses on the development and wellness of individuals and families throughout the life cycle. Topics include human development and wellness theories, principles, and practices; life cycle expectations and issues, including biological, physiological, social, and psychological needs and concerns of aging adults; community services, agencies, and resources; roles, responsibilities, and functions of families, family members and caregivers; family issues, including ethics, human worth and dignity, change, stress, neglect and abuse, and care of the care-giver; individual and family wellness planning; and fostering intergenerational relationships. Practical experiences related to these topics are included through a variety of activities such as volunteer experiences, service learning, and intergenerational event planning opportunities. Information on a variety of human and family services careers is incorporated throughout the course.

#### Course ID: 19105A001 Nail Technology I

- **Starting School Year:** 2011
- **Ending School Year:**
- **Maximum Credit:** 3.00

The Nail Technology program must be approved and licensed by the Illinois Department of Financial and Professional Regulations, Division of Professional Regulation and meet all state and federal regulations. Nail Technology offers students curriculum in both general theory and practical application in the following area of basic training: history of nail care, personal hygiene and public health; professional ethics; sterilization and disinfection; bacteriology; disorders of the nails; OSHA standards as relative to MSDS on chemicals, chemicals and their use; and technical applications of chemicals as they relate to the Barber, Cosmetology, Esthetics, and Nail Technology Act. Knowledge, skills, and activities completed in this course will help prepare to become a licensed nail technician, while earning hours towards the 350 hours of instruction in nail technology.

#### Course ID: 19204A002 Textile and Design Occupations

- **Starting School Year:** 2011
- **Ending School Year:**
- **Maximum Credit:** 3.00

The Textile and Design Occupations course focuses on the study and application of functional and aesthetic design, human factors research, production planning, manufacturing processes, quality assessment, and distribution systems of textile products. Additional topics include: consumer and industry textile trends; industry specific terminology; advanced design applications; project development, management, and supervision; safety codes and procedures; portfolio development and presentation; client relationships; and individualized mastery of textile/design skills.

#### Course ID: 19201A001 Textiles and Design I

- **Starting School Year:** 2011
- **Ending School Year:**
- **Maximum Credit:** 1.00

This course is designed to provide basic knowledge and understanding of the design, development, and production of textile products. Through hands-on and project based learning experiences students will discover fiber characteristics, fabric construction methods, elements of science and design in textiles and apparel, and basic construction skills used in interior furnishings and apparel industries. This course emphasizes awareness and investigation of careers and industry trends in textiles.

#### Course ID: 19203A001 Textiles and Design II

- **Starting School Year:** 2011
- ** Ending School Year:**
- **Maximum Credit:** 1.00

This project-based course focuses on the implementation and recognition of design principles in selecting, constructing, altering, and remodeling textile products. Project management skills, including efficient use of time, materials, technique, and tools are incorporated throughout the course. Topics include: engineered fabric constructions; fiber and textile trends; color theory; principles of design; fabric finishes; industry construction techniques; use of industry tools, equipment, and terminology; knowledge of resources and vendors; research and evaluation of textile products for special needs populations; impacts of technology; construction, alteration and re-design skills; and simple flat pattern design and recognition.
Subject Area: 20 - Transportation, Distribution and Logistics

Course ID: 20113A001  Aircraft Technician I
Starting School Year: 2011
This course provides experiences related to the maintenance, repair, and servicing of a variety of aircraft powerplants. Planned learning activities allow students to become knowledgeable in fundamental principles of aircraft powerplant construction. In addition, students develop technical skills related to avionics, aviation, and airplane power plants. Instruction includes the types, structures, and mechanics of airplanes, electronics, gauge purpose and care, engine mechanics, major component identification, construction techniques, hydraulics, evolution of aerodynamics, and comparison of similar elements in different types of air craft.

Course ID: 20113A002  Aircraft Technician II
Starting School Year: 2011
This course provides experiences related to the maintenance, repair, and servicing of a variety of aircraft powerplants and their associated mechanical systems. Planned learning activities emphasize the development of more advanced knowledge and skill than those provided in Aircraft Technician I. Student technical skill experiences include instruction and activities in aviation construction, shop and maintenance related areas of aircraft, safety principles and practices, as well as continued development of skills associated with aircraft powerplants.

Course ID: 20116A001  Auto-Body I
Starting School Year: 2011
This course provides learning experiences designed to allow students to gain knowledge and skills in repairing automotive bodies and fenders. Planned learning activities in this course are balanced to allow students to become knowledgeable in the fundamental aspects of auto body repair methods and techniques, and to develop practical skills in the basic operations required to prepare the automobile for final paint application. Instruction emphasizes safety principles and practices, hazardous materials, auto body nomenclature, function of individual components, the use of parts manuals, the identification of replacement parts, the use of auto body fillers, the use of plastic/glass fillers and special body repair tools, refinishing problems, and paint preparation procedures. Practical activities relate to experiences in writing and calculating damage estimates, removing and installing body panels, trim, and glass; straightening by using hammers, bucks, and jacks; and smoothing by filing, grinding, and using fillers. Students also learn to prime the area to be painted and prepare the surface for final paint application. These experiences and skills are related to metal, fiberglass, or urethane components.

Course ID: 20116A002  Auto-Body II
Starting School Year: 2011
This course provides learning experiences designed to further enhance the students’ skills in performing more advanced tasks related to automotive body and fender repair. Learning activities in this course emphasize the successful application of the final paint coat and the preparation that precedes it. Emphasis is also placed upon the identification and correction of imperfections and finish buffing of the final coat. Student learning activities include instruction in safety principles and practices, hazardous materials, types and qualities of paints, colors, and refinishing problems; glass standards and installation, special alignment techniques, customer relations, damage estimating, and insurance adjustments. Student practical activities relate to experiences in estimating collision damage costs, preparing customer bills, removing and replacing glass surfaces, selecting paints, repainting minor and major damages, repainting total car body, drying or baking painted surfaces, post-paint cleanup, and post-paint polishing.

Course ID: 20104A001  Automotive Technician I
Starting School Year: 2011
This course introduces students to the basic skills needed to inspect, maintain, and repair automobiles and light trucks that run on gasoline, electricity, or alternative fuels. Instructional units include engine performance, automotive electrical system, integrated computer systems, lubrication, exhaust and emission control, steering and suspension, fuel systems, cooling system, braking, and power train.

Course ID: 20104A002  Automotive Technician II
Starting School Year: 2011
This course is a continuation of and builds on the skills and concepts introduced in Automotive Technician I. This course includes instructional units in alternative fuel systems, computerized diagnostics, new vehicle servicing, automotive heating and air conditioning, transmissions, testing and diagnostics, drive train and overall automobile performance.
Course ID: 20053A001  Aviation/Pilot I
Starting School Year: 2011  Ending School Year:  Maximum Credit: 3.00
This course introduces students to the airplane piloting and the navigation field. Instructional units include principles of flight, the flight environment, aircraft systems and performance, meteorology for pilots, interpreting weather data, and basic navigation.

Course ID: 20053A002  Aviation/Pilot II
Starting School Year: 2011  Ending School Year:  Maximum Credit: 3.00
This course is a continuation of and builds on the skills and concepts introduced in Aviation/Pilot I. This course includes instructional units in radio navigation systems, aviation physiology, flight planning and decision making, aviation history, the nature of space, rockets, and space flight, and careers in aviation and aerospace.

Course ID: 20106A001  Beginning Automotive Services
Starting School Year: 2012  Ending School Year:  Maximum Credit: 1.00
Beginning Automotive Service course emphasizes preventative auto maintenance and automobile troubleshooting. Course content typically includes tune-up, oil change, and lubrication skills; tire replacement, alignment, and balancing; and basic knowledge of brake, cooling, electrical, emission, fuel, ignition, steering, suspension, and transmission systems.

Course ID: 20107A001  Diesel Mechanics
Starting School Year: 2013  Ending School Year:  Maximum Credit: 3.00
Diesel Mechanics—Comprehensive courses prepare students to maintain and repair diesel engines and related systems. Specific course topics may include principles underlying diesel engines, analyzing electrical circuits and systems, troubleshooting and repairing cooling systems, testing and repairing air conditioning charging systems, reading and interpreting service manuals, and identifying the principles and components of fuel injection systems. Courses may also cover safety, employability skills, and entrepreneurship.

Course ID: 20101A001  Energy Utilization Technology
Starting School Year: 2011  Ending School Year:  Maximum Credit: 1.00
Energy Utilization Technology is a course designed to foster an awareness and understanding of how we use energy in our industrial technological society. Areas of study include conversion of energy, electrical fundamentals, solar energy resources, alternate energy resources such as wind, water, and geothermal; fossil fuels, nuclear power, energy conservation, and computer uses in energy technology. Students use laboratory experiences to become familiar with current energy technologies.

Course ID: 20112A001  Heavy Equipment Technician I
Starting School Year: 2011  Ending School Year:  Maximum Credit: 3.00
This course introduces students to the basic skills needed to repair and maintain heavy equipment found in the manufacturing industry. Topics covered in this course include safety, blueprint reading basic hand and power tools, introductory hydraulics and pneumatics, orientation to computer diagnostics, basic electricity and electronics, and an introduction to welding technology.

Course ID: 20112A002  Heavy Equipment Technician II
Starting School Year: 2011  Ending School Year:  Maximum Credit: 3.00
This course is a continuation of Heavy Equipment Technician I and builds on the skills and concepts introduced there. New skills introduced in this course include metal separating, drill press, metal lathe, surface grinder, and milling machine operation. Also included are units of instruction on advanced electronics and electricity along with additional skill building activities in welding, braising, hydraulics, pneumatics, computer diagnostics, and precision measurement.

Course ID: 20110A001  Small Engine Repair I
Starting School Year: 2011  Ending School Year:  Maximum Credit: 3.00
Small engine repair is an instructional program that prepares individuals to troubleshoot, service, and repair a variety of small internal-combustion engines, involving both two and four cycle engines used on portable power equipment. Planned activities will allow students to become knowledgeable of fundamental principles and technical skills related to troubleshooting, repairing, identifying parts and making precision measurements. Safety will be a key component of this class. Students will also be exposed to career opportunities related to small engines.
### Small Engine Repair II

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<th>Course ID</th>
<th>20110A002</th>
<th>Course Name</th>
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<td>Starting School Year</td>
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This course will be designed to provide the student with the opportunity to complete specialized study in the service and repair of small engines and related systems. Some of these areas may include chain saw repair, snow blower repair, snowmobile repair, generator repair, motorcycle repair, etc. Planned activities will allow students to become knowledgeable of fundamental principles and technical skills related to troubleshooting, repairing, identifying parts and making precision measurements. Other areas that will be covered deal with electrical, systems, ignition systems, drive train and chassis systems. Safety will be a key component of this class. Students will also be exposed to career opportunities related to small engines.

### Transportation Technology

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<th>Course ID</th>
<th>20001A001</th>
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Transportation Technology is a course designed to foster an awareness and understanding of the various transportation customs that make up our mobile society. Through laboratory activities, students are exposed to the technologies of and career opportunities involved in material handling, atmospheric and space transportation, marine transportation, terrestrial transportation, and computer uses in transportation technology.

### Warehouse Operations I

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<th>Course ID</th>
<th>20152A001</th>
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<td>Starting School Year</td>
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This course provides planned learning activities designed to allow students to gain knowledge and skills applicable to the Parts, Warehousing, and Inventory Management Operations occupation. Students are instructed in areas of safety, inventory management, warehouse operations, and inventory control.

### Warehouse Operations II

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<th>Course ID</th>
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This course provides planned learning activities designed to allow students to gain knowledge and skills in PC based inventory control, parts identification, and customer service. Learning activities in this course emphasize the development of more advanced knowledge and skills than those provided in Warehouse Operations I. Skills introduced in this course include database operations, supply logistics, supplier relations, and shop operations.
Subject Area: 21 - Engineering and Technology

Course ID: 21054A002 Advanced Design Applications (EbD)
Starting School Year: 2011  Ending School Year:  
Maximum Credit: 3.00

This course consists of four units including Manufacturing, Energy and Power, Construction and Transportation. The Manufacturing unit examines the advances that maintain manufacturing efficiency, how human consumption affects manufacturing, how manufacturing affects the standard of living of various peoples, and how processing and changing raw materials can produce more desirable products. The Construction unit examines a number of factors influencing the design and construction of permanent and semi-permanent structures, the practices related to construction maintenance, alteration, and renovation and the functions of the primary systems installed in those structures. The Energy & Power unit explores the relationship between energy and power technologies and all other technologies, and how modern energy and power systems impact cultures, societies, and the environment. It also offers an examination of how energy and power systems can become more efficient and how they may be utilized in problem solving. The Transportation unit examines the complex networks of interconnected subsystems that comprise each transportation system, and the roles of these components in the overall functional process of the system. It also analyzes the improvements and the impacts of transportation technologies on the environment, society, and culture.

Course ID: 21054A003 Advanced Technological Applications (EbD)
Starting School Year: 2011  Ending School Year:  
Maximum Credit: 3.00

In this course, students study four components of the Designed World including Information Technology, Agriculture and Bio-related Technologies, Medical, and Entertainment/Recreation. The Information Technologies unit examines how technology facilitates the gathering, manipulation, storage, and transmission of data, and how this data can be used to create useful products. It also provides students with opportunities for developing communications systems that can solve technological problems. The Agriculture and Biotechnologies unit explores how agricultural technologies provide increased crop yields and allow adaptation to changing and harsh environments, enabling the growth of plants and animals for various uses. It also offers an analysis of the various uses of biotechnology and the ethical considerations of those uses. The Medical Technologies Unit provides an analysis of how medical technologies are used to increase the quality and length of human life, and how increased use of technology carries potential consequences which require public debate. Students also examine tools and devices used to repair and replace organs, prevent disease, and rehabilitate the human body. The Entertainment and Recreation unit provides a study of technological entertainment and recreation systems with an examination of the differences between these technologies, how their use enhances human leisure-time performance, and the social, cultural, and environmental implications of their usage.

Course ID: 21013A001 Aerospace Engineering (PLTW)
Starting School Year: 2011  Ending School Year:  
Maximum Credit: 3.00

Through hands-on engineering projects developed with NASA, students learn about aerodynamics, astronautics, space-life sciences, and systems engineering (which includes the study of intelligent vehicles like the Mars rovers Spirit and Opportunity).

Course ID: 21103A001 Architectural Drafting I
Starting School Year: 2011  Ending School Year:  
Maximum Credit: 3.00

This course is designed to provide students interested in a career in Architecture with information and practical experience needed for the development of job-related competencies. Students are made aware of the career opportunities available in the Architectural Drafting and Architectural Drafting CAD - CADD field. Instruction is provided in the areas of planning and organizing activities, researching information, performing general office procedures, preparing of preliminary drawings, basic layout, detail drawings, reproduction techniques, producing working drawings, and computer aided drafting. Students are also provided with instruction in producing architectural drawings in the areas of presentation, floor plans, illustration of landscape features, sketching preliminary floor plans, drawing foundation plans and sections, exterior elevations, stair sections, chimney sections, roof sections, finish schedules, preparing plumbing, HVAC and electrical plans, and structural drawings.

Course ID: 21103A002 Architectural Drafting II
Starting School Year: 2011  Ending School Year:  
Maximum Credit: 3.00

Instruction is provided in the areas of locating information using computer data files, determination of materials and availability, project conferences, checking plan dimensions, drawing schematic sketches, preparing scale sketches, producing drawings from written/verbal instructions, application of coordinate dimensioning standards, creating drawings using a plotter/prинтер, producing renderings and/or charts and graphs, and common plan features. Instruction is also provided in the areas of drawing framing plans, wall sections, fireplace sections, door sections, door and window schedules, dimensioning structural steel drawings, constructing column detail drawings, preparation of structural foundation, slab and floor plans, drawing electrical, block, schematic, and electrical connection drawings. Skills relating to CAD include preparation of a basic CAD drawing, building and editing a data base, developing a 3-dimensional drawing and selecting appropriate line work, line weight, and color.
CTE - State Courses

Subject Area: 21 - Engineering and Technology

Course ID: 21102A002 Beginning Drafting
Starting School Year: 2012 Ending School Year: Maximum Credit: 1.00
Beginning Drafting is an introductory level drafting course. During this course students will learn the basic fundamentals of drafting and/or computer aided drafting (CAD). The instruction will include the care and use of drafting equipment, freehand sketching, orthographic projection, lettering techniques, dimensioning standards, pictorial drawings, drawing reproduction, and an introduction to CAD.

Course ID: 21014A001 Biotechnical Engineering (PLTW)
Starting School Year: 2011 Ending School Year: Maximum Credit: 3.00
This course includes relevant projects from the diverse fields of bio-technology, bio-engineering, bio-medical engineering, and bio-molecular engineering which enable students to apply and concurrently develop secondary-level knowledge and skills in biology, physics, technology, and mathematics.

Course ID: 21012A001 Civil Engineering & Architecture (PLTW)
Starting School Year: 2011 Ending School Year: Maximum Credit: 3.00
This course provides an overview of the fields of Civil Engineering and Architecture, while emphasizing the interrelationship and dependence of both fields on each other. Students use state-of-the-art software to solve real world problems and communicate solutions to hands-on projects and activities. This course covers topics such as the roles of civil engineers and architects, project planning, site planning, building design, project documentation, and presentation.

Course ID: 21010A001 Computer Integrated Manufacturing (PLTW)
Starting School Year: 2011 Ending School Year: Maximum Credit: 3.00
This course applies principles of robotics and automation in manufacturing through computer control. The course builds on computer solid modeling skills developed in Introduction to Engineering Design. Students use CNC equipment to produce actual models of their three-dimensional designs. Fundamental concepts of robotics used in automated manufacturing and design analysis are included.

Course ID: 21008A001 Digital Electronics (PLTW)
Starting School Year: 2011 Ending School Year: Maximum Credit: 3.00
This is a course in applied logic that encompasses the application of electronic circuits and devices. Computer simulation software is used to design and test digital circuitry prior to the actual construction of circuits and devices.

Course ID: 21102A001 Drafting
Starting School Year: 2011 Ending School Year: Maximum Credit: 3.00
Drafting—General courses, usually offered as a sequence of courses, introduce students to the technical craft of drawing illustrations to represent and/or analyze design specifications and then refine the skills necessary for this craft. Drafting—General courses use exercises from a variety of applications to provide students with the knowledge and experience to develop the ability to perform freehand sketching, lettering, geometric construction, and multiview projections and to produce various types of drawings (working, detail, assembly, schematic, perspective, and so on). Computer-aided drafting (CAD) systems (if available) are typically introduced and used to fulfill course objectives.

Course ID: 21053A001 Emerging Technologies
Starting School Year: 2013 Ending School Year: Maximum Credit: 3.00
Emerging Technologies courses emphasize students’ exposure to and understanding of new and emerging technologies. The range of technological issues varies widely but typically include lasers, fiber options, electronics, robotics, computer technologies, CAD/CAM, communication modalities, and transportation technologies.

Course ID: 21007A002 Engineering Design & Development (PLTW)
Starting School Year: 2011 Ending School Year: Maximum Credit: 3.00
This course is an advanced course in which students demonstrate mastery of knowledge and skills from previous pre-engineering courses to develop an original product or machine design. In groups using project-based learning, students research, design, and construct a solution to an engineering problem. Students apply principles developed in the preceding courses and are guided by an industry mentor. Students must present progress reports, submit a final written report, and defend their solutions to a panel of outside reviewers at the end of the course. Students are placed in management situations in production operations to develop leadership and entrepreneurship skills. Students are responsible for scheduling, pricing, procuring materials and equipment, and the maintaining of equipment.
Course ID: 21006A002  Engineering Design (EbD)

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In this course, engineering scope, content, and professional practice are presented through practical applications. Students in engineering teams apply technology, science, and mathematics concepts and skills to solve engineering design problems and create innovative designs. Students research, develop, test, and analyze engineering designs using criteria such as design effectiveness, public safety, human factors, and ethics. This course is the capstone experience for students who are interested in Technology, Innovation, Design, and Engineering.

Course ID: 21052A001  Foundations of Technology (EbD)

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This course focuses on the three dimensions of technological literacy: knowledge, ways of thinking and acting, and capabilities, with the goal of students developing the characteristics of technology literate citizens. The course employs teaching/learning strategies that enable students to build their own understanding of new ideas. It is designed to engage students in exploring and deepening their understanding of “big ideas” regarding technology and makes use of a variety of assessment instruments to reveal the extent of understanding in the following areas: engineering design, manufacturing technologies, construction technologies, energy & power, information & communication technologies.

Course ID: 21006A001  Introduction to Engineering Design (PLTW)

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This course teaches problem-solving skills using a design development process. Models of product solutions are created, analyzed and communicated using solid modeling computer design software.

Course ID: 21052A002  Introduction to Technology and Engineering (Industrial)

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Introduction to Technology & Engineering is comprised of the following areas: Production, Transportation, Communication, Energy Utilization and Engineering Design but is not limited to these areas only. This course will cover the resources, technical processes, industrial applications, technological impact and occupations encompassed by that system.

Course ID: 21106A001  Mechanical Drafting I

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This course introduces students to layout to scale using specified tolerances, preparing detail drawing for individual parts from drawings, layout and creating assembly drawings, and preparing mechanical orthographic subassembly drawings. This course also includes a sequence of CAD experiences in 2-dimensional and 3-dimensional drawing generation to include vocabulary development, system operation, entity creation, dimensioning and text insertion, plotting, three dimensional coordinate system, 3-D parts detailing and assembly drawings, wire frame models, and system management relative to hard disk and tape storage systems.

Course ID: 21106A002  Mechanical Drafting II

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Instruction is provided in the areas of identifying appropriate interfacing personnel (internal/external), producing renderings and project time schedules, producing structural working drawings as structural steel plans, dimension structural steel drawings, and draw beam connections, and producing electrical and electronic working drawings as electrical and electronic schematic diagrams. Additional skills introduced in this program include determining the requirements of a specific drafting job, preparing preliminary drawings such as freehand, isometric, orthographic, and oblique sketches; preparing detail drawings such as creating assembly drawings, orthographic projections, sectional views, auxiliary views, isometric views and letter drawings; producing mechanical working drawings such as detailing components of mechanical orthographic assembly and subassembly drawings; using CAD command processes as preparing a basic CAD drawing, start up, log on, retrieve, save, log off and shut down CAD system; creating disk files, copying disk files, and generating a grid on drawing.

Course ID: 21004A001  Principles of Engineering (PLTW)

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This course helps students understand the field of engineering/engineering technology. Exploring various technology systems and manufacturing processes helps students learn how engineers and technicians use math, science, and technology in an engineering problem solving process to benefit people. The course also includes concerns about social and political consequences of technological change.
### CTE - State Courses

**Subject Area: 21 - Engineering and Technology**

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<th>Course ID</th>
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<td>21001A001</td>
<td>Principles of Technology I</td>
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<td>21001A002</td>
<td>Principles of Technology II</td>
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<td>21009A001</td>
<td>Robotics</td>
<td>2012</td>
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<tr>
<td>21054A001</td>
<td>Technological Design (EbD)</td>
<td>2011</td>
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**Course ID: 21001A001 Principles of Technology I**

Starting School Year: 2011, Ending School Year: Maximum Credit: 3.00

This course provides learning experiences related to the principles that underlie today's high technology: force, work, rate, resistance, energy, power, and force transformers. The course deals with these principles as they apply in each of the four systems that make up both the simplest and the most complex technological devices and equipment: mechanical systems, fluid systems, electrical systems, and thermal systems. Learning experiences are designed to allow students to acquire knowledge and skills which are transferable to postsecondary technical programs.

**Course ID: 21001A002 Principles of Technology II**

Starting School Year: 2011, Ending School Year: Maximum Credit: 3.00

This course includes learning experiences related to the principles that underlie today's high technology: momentum, waves and vibrations, energy converters, transducers, radiation, optical systems, and time constraints. The course deals with these principles as they apply in each of the systems that make up both the simplest and the most complex technological devices and equipment: mechanical systems, fluid systems, electrical systems, and thermal systems. Learning experiences are designed to allow students to acquire knowledge and skills which are transferable to postsecondary technical programs.

**Course ID: 21009A001 Robotics**

Starting School Year: 2012, Ending School Year: Maximum Credit: 3.00

Robotics courses develop and expand students' skills and knowledge so that they can design and develop robotic devices. Topics covered in the course may include mechanics, electrical and motor controls, pneumatics, computer basics, and programmable logic controllers.

**Course ID: 21054A001 Technological Design (EbD)**

Starting School Year: 2011, Ending School Year: Maximum Credit: 3.00

In this course, engineering scope, content, and professional practices are presented through practical applications. Students in engineering teams apply technology, science, and mathematics concepts and skills to solve engineering design problems and innovative designs. Students research, develop, test, and analyze engineering designs using criteria such as design effectiveness, public safety, human factors, and ethics.
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<th>Course ID</th>
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<tr>
<td>22153A001</td>
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<td>Cooperative Education</td>
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<td>22207A001</td>
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<td>2011</td>
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<td>22249A001</td>
<td>Miscellaneous</td>
<td>Family and Consumer Sciences Communications</td>
<td>2013</td>
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<td>22210A001</td>
<td>Miscellaneous</td>
<td>Family Resource Management and Planning</td>
<td>2011</td>
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Cooperative Education is a capstone course designed to assist students in the development of effective skills and attitudes through practical, advanced instruction in school and on the job through cooperative education. Students are released from school for their paid cooperative education work experience and participate in 200 minutes per week of related classroom instruction. Classroom instruction focuses on providing students with job survival skills and career exploration skills related to the job and improving students' abilities to interact positively with others. For skills related to the job, refer to the skill development course sequences, the task list or related occupational skill standards of the desired occupational program. The course content includes the following broad areas of emphasis: further career education opportunities, planning for the future, job-seeking skills, personal development, human relationships, legal protection and responsibilities, economics and the job, organizations, and job termination. A qualified career and technical education coordinator is responsible for supervision. Written training agreements and individual student training plans are developed and agreed upon by the employer, student and coordinator. The coordinator, student, and employer assume compliance with federal, state, and local laws and regulations.

This course is designed to focus on the knowledge, attitudes, and behaviors needed to participate in positive, caring, and respectful relationships in the family, community, and workplace. This project-based course uses communication, leadership and management methods to develop knowledge and behaviors necessary for individuals to become independent, contributing, and responsible participants in family, community, and career settings. Emphasis is placed on the development of techniques and strategies to assist individuals in responding to situations presented in family relationships and the workplace. The course content includes: managing responsibilities, satisfactions and stresses of work and family life; analyzing personal standards, needs, aptitudes and goals; roles and responsibilities of living independently and as a family member; demonstrating goal-setting and decision-making skills; identifying and utilizing community resources; and developing effective relationships to promote communication with others. The course provides students content to identify resources that will assist them in managing life situations.

This course provides the opportunity for students to investigate and analyze current family and consumer sciences issues and determine how they affect people on all sides of the issue. Students will participate in projects and activities that will reinforce goal-setting, character development, parliamentary procedure, and other leadership traits to become successful in life and the workplace. The students will develop and enhance their written and verbal communication skills through presentations of their views and opinions. Students will demonstrate their ability to arrange and present information through a variety of experiences, including but not limited to written, debate, testimonial, and interviews. Participation in Family, Career, and Community Leaders of America (FCCLA) student organization programs and activities are an integral course component for leadership development, career exploration, and reinforcement of academic concepts. Community service projects and opportunities to practice communication and leadership skills will be an integral part of this course.

This course focuses on the identification and management of personal and family resources to meet the needs, values, and wants of individuals and families throughout the life cycle. The course utilizes a variety of project-based experiences and service learning opportunities to gain knowledge and expertise in understanding and applying management skills, with consideration to diverse social, economic, technological, environmental, and cultural characteristics of individuals and families. Topics include: consumer rights and responsibilities in the marketplace; financial responsibility and decision making; planning and money management; credit and debt; risk management and insurance; saving and investment; homeownership; state and federal taxes; electronic banking; and current issues in the economy.
Course ID: 22153A002  FCS Cooperative Education
Starting School Year: 2011  Ending School Year:  
Maximum Credit: 3.00
Family and Consumer Sciences Cooperative Education is designed for students interested in pursuing careers in occupations in the field family and consumer sciences. Classroom instruction focuses on providing students with workplace skills, post-secondary education opportunities related to the job/career pathway, developing and maintaining positive workplace relationships, planning for the future, legal protection and responsibility, professional organizations, and advancing skills related to the job. Classroom and worksite instruction is based on the duties of the FCS occupation. Students are released from school for their paid cooperative education work experience, participate in 200 minutes per week of related classroom instruction, and supervised on-the-by a qualified instructor ½ hour or more per week per student. A qualified, certified FCS instructor is responsible for supervision. Written training agreements and individual student training plans are developed and agreed upon by the employer, student and coordinator. The coordinator, student and employer assume compliance with federal, state and local laws and regulations.

Course ID: 22203A001  Food Science
Starting School Year: 2011  Ending School Year:  
Maximum Credit: 1.00
The scientific method is used to study foods as a combination of chemical, physical and biological sciences. Laboratory skills in measuring, recording, and analyzing data are used to explore the interrelationship of food science to the other sciences; the scientific evaluation of food, matter, electrolyte solutions, energy, nutrition; food safety; and food chemistry. Experimental methods are used to analyze food mixtures, food microbiology, fermentation, sensory processes, the preservation of foods and complex food systems. Technology is studied as it relates to product development, consumer needs and experimental designs. Emphasis is placed on emerging careers in food science and biotechnology and the application of food science in food service, nutrition, dietetics, and product development.

Course ID: 22211A001  Interior Design: Residential, Commercial, and Public Space
Starting School Year: 2011  Ending School Year:  
Maximum Credit: 3.00
This course provides basic knowledge and skills needed to select, acquire, furnish, maintain, and manage residential and commercial environments to meet the needs of the users/occupants. The course includes the application of the interior design elements and principles; selection and care of furnishings, equipment and accessories in relation to socio-economic factors, trends, personal tastes and characteristics, as well as physical and psychological needs; safety, sanitation, and efficiency factors in interior design; and evaluating use and care of textiles. This project based course investigates a variety of related career opportunities, including entrepreneurship. Emphasis is placed on the application of project management skills.

Course ID: 22201A001  Introduction to Family and Consumer Sciences Careers
Starting School Year: 2011  Ending School Year:  
Maximum Credit: 1.00
This course introduces students to the field of family and consumer sciences and the many career opportunities available in this broad field. The course includes theory and laboratory experiences in the following content areas: Nutrition and culinary arts; textiles and design; family, career, and community leadership development; resource management; human development and life-long learning; facility design, care, and management; and interpersonal relationships and life management skills.

Course ID: 22204A001  Parenting
Starting School Year: 2011  Ending School Year:  
Maximum Credit: 1.00
This course helps students understand the responsibilities, satisfactions and stresses of parenthood. Course content includes the following: managing and organizing parenting by applying decision-making and goal-setting skills; applying the basic principles of the parenting process; practicing health and safety standards as related to parenting; providing experiences which encourage parents and children to maximize resources; encouraging human relations skills in children/adolescents; community resource agencies and services; and evaluating impact on parenting of family and career changes.

Course ID: 22004A001  Work Experience and Career Exploration Program
Starting School Year: 2011  Ending School Year:  
Maximum Credit: 3.00
Dropout Prevention Program courses vary widely, but typically are targeted at students who have been identified as being at risk of dropping out of or failing in school. Course content may include study skills and individual tutorials; job preparation, readiness, application, or interview skills; communication skills; personal assessment and awareness activities; speaker presentations; and small group seminars.
Subject Area: 68 - Agriculture/ Food/ and Natural Resources (prior-to-secondary)

Course ID: 68003A001 Exploratory Agricultural Science
Starting School Year: 2012    Ending School Year:    Maximum Credit: 0.00
This exploration course provides the opportunity to learn fundamental concepts in agriculture to serve as a foundation for future courses and to inform students about the industry that is so vital to society and to their future. Major units of instruction include an introduction to the agricultural industry, animal science, plant science, horticulture science, agribusiness, environmental science, agricultural mechanics, food science, and leadership and personal development. Participation in FFA student organization activities is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

Course ID: 68003A002 Exploratory Horticultural Science
Starting School Year: 2012    Ending School Year:    Maximum Credit: 0.00
This exploration course provides the opportunity to learn fundamental concepts in horticulture to serve as a foundation for future courses and to inform students about the fastest growing sector of the Agricultural Industry. Major units of instruction include introduction to the horticulture industry, plant science, plant identification, plant propagation, marketing products from horticulture, and leadership and personal development. Participation in FFA student organization activities is an integral course component for leadership development, career exploration and reinforcement of academic concepts.
### CTE - State Courses

**Subject Area: 71 - Engineering and Technology (prior-to-secondary)**

<table>
<thead>
<tr>
<th>Course ID: 71002A001</th>
<th>Automation and Robotics</th>
<th>Starting School Year: 2012</th>
<th>Ending School Year:</th>
<th>Maximum Credit: 0.00</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Students trace the history, development, and influence of automation and robotics. They learn about mechanical systems, energy transfer, machine automation and computer control systems. Students acquire knowledge and skills in problem solving, teamwork collaboration and innovation.</td>
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<table>
<thead>
<tr>
<th>Course ID: 71006A001</th>
<th>Design and Modeling</th>
<th>Starting School Year: 2012</th>
<th>Ending School Year:</th>
<th>Maximum Credit: 0.00</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>This unit uses solid modeling software (a sophisticated mathematical technique for representing solid objects) as part of the design process. Utilizing this design approach, students understand how design influences their lives. Students also learn sketching techniques and use descriptive geometry as a component of design, measurement and computer modeling. Students brainstorm, research, develop ideas, create models, test and evaluate design ideas and communicate solutions.</td>
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<table>
<thead>
<tr>
<th>Course ID: 71004A001</th>
<th>Energy and the Environment</th>
<th>Starting School Year: 2012</th>
<th>Ending School Year:</th>
<th>Maximum Credit: 0.00</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Students investigate the importance of energy in our lives and the impact energy use has on the environment. They design and model alternative energy sources and participate in an energy expo to demonstrate energy concepts and innovative ideas. Students evaluate ways to reduce energy consumption through energy efficiency and waste management techniques.</td>
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<table>
<thead>
<tr>
<th>Course ID: 71001A002</th>
<th>Exploring Technology (EbD)</th>
<th>Starting School Year: 2012</th>
<th>Ending School Year:</th>
<th>Maximum Credit: 0.00</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>This course helps to develop an understanding of the progression and scope of technology through exploratory experiences. In group and individual activities, students experience ways in which technological knowledge and processes contribute to effective designs, abilities, and skills contribute to effective design and solutions to technological problems. Students participate in design activities to understand how criteria, constraints, and processes affect designs.</td>
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<table>
<thead>
<tr>
<th>Course ID: 71002A002</th>
<th>Flight and Space</th>
<th>Starting School Year: 2012</th>
<th>Ending School Year:</th>
<th>Maximum Credit: 0.00</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Students study the history of aerospace through hands-on activities, research and a presentation in the form of an infomercial. Students explore the science behind aeronautics and use their knowledge to design, build and test a model glider. Simulation software is used to expose students to traveling and living in space.</td>
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<table>
<thead>
<tr>
<th>Course ID: 71006A002</th>
<th>Invention and Innovation (EbD)</th>
<th>Starting School Year: 2012</th>
<th>Ending School Year:</th>
<th>Maximum Credit: 0.00</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>This course provides students with opportunities to apply the design process in the invention or innovation of a new product, process, or system. It will help develop a student’s understanding of the scope of technology and the nature of technological design and problem-solving processes. Students will be involved in activities and experiences where they learn about brainstorming, visualizing, modeling, constructing, testing, experimenting, and refining designs.</td>
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<thead>
<tr>
<th>Course ID: 71002A003</th>
<th>Magic of Electrons</th>
<th>Starting School Year: 2012</th>
<th>Ending School Year:</th>
<th>Maximum Credit: 0.00</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Through hands-on projects, students explore the science of electricity, the behavior and parts of atoms, circuit design and sensing devices. Students acquire knowledge and skills in basic circuitry design and explore the impact of electricity on their lives.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Course ID: 71001A001</th>
<th>Science of Technology</th>
<th>Starting School Year: 2012</th>
<th>Ending School Year:</th>
<th>Maximum Credit: 0.00</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Students trace how science has affected technology throughout history and learn about applied physics, chemical engineering and nanotechnology though exploratory activities and projects.</td>
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</table>

<table>
<thead>
<tr>
<th>Course ID: 71004A002</th>
<th>Technological Systems (EbD)</th>
<th>Starting School Year: 2012</th>
<th>Ending School Year:</th>
<th>Maximum Credit: 0.00</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>This course is intended to teach students how technological systems work together to solve problems and capture opportunities. Students participate in engineering design activities to understand how criteria, constraints, and processes affect designs. This course will give students a general background on the different types of systems, but will concentrate more on the connections between these systems.</td>
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