

C⁴ COLUMBUS AREA CAREER CONNECTION

GENERAL CTE

T1000 Preparing for College and Careers

Open to grade 9

1 semester, 1 credit per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40 (Directed Elective or Elective), GS

Qualifies for one of the F&CS waiver health credits

Preparing for College and Careers addresses the knowledge, skills, and behaviors all students need to be prepared for success in their career, college, and life. The focus of the course is the impact of today's choices on tomorrow's possibilities. Topics to be addressed include twenty-first century life and career skills; higher order thinking, communication, leadership, and management processes; exploration of personal aptitudes, interests, values, and goals; examining multiple life role and responsibilities as individuals and family members; planning and building employability skills; transferring school skills to life and work; and managing personal resources. This course includes reviewing the 16 national career clusters and Indiana's College and Career Pathways, in depth investigation of one or more pathways, reviewing the 16 national career clusters and Indiana's College and Career Pathways, in-depth investigation of one or more pathways, reviewing graduation plans, and developing personal career plans. A project-based approach, including computer and technology applications, cooperative ventures between school and community, simulations, and real life experiences, is recommended.

AGRICULTURAL SCIENCE & BUSINESS CLUSTER

T50011 Intro to Agriculture Food & Natural Resources (5056)

Open to grades 9, 10, 11, 12

2 semesters, 1 credit per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

This course prepares students who are interested in the study of Agriculture. Students complete projects and learning activities that focus on hands-on real-life situations in the study of animals, plants, soil, food, and horticultural sciences. Other studies include agricultural business management, landscape management, natural resources, careers and leadership in agriculture, and supervised agricultural experiences. An activity and project-based approach

is used along with team-building to enhance the effectiveness of the student learning activities.

T50021 Agribusiness Management (5002)

Open to grades 11, 12

Recommendation(s): Introduction to Agriculture Food & Natural Resources

2 semesters, 1 credit per semester

Meets requirements: THD, AHD, Core 40

Approximate cost per semester: TBD

Note: Qualifies for Quantitative Reasoning

Agribusiness Management provides the foundation concepts in agricultural business and completes the agricultural pathway for many students. It is a two semester course that introduces students to the principles of business organization and management from a local and global perspective, with the utilization of technology. Concepts covered in the course include accounting and record-keeping, business planning and management, food and fiber, forms of business finance, management, sales and management, careers, and leadership development. Students will demonstrate principles and techniques for planning, development, application, and management of agribusiness systems through a supervised agriculture experience.

T50031 Urban Greenhouse Production (5132)

Open to grades 9, 10, 11, 12

2 semester, 1 credit per semester (2 semesters required)

Meets requirements: THD, AHD, Core 40

Approximate cost per semester: TBD

Recommendation(s): Intro to Agriculture Food & Natural Resources

Dual Credit Available (3 credits)

Students explore the life cycle of plants. They learn how to care for plants, what requirements plants have for survival, the basics of landscape management, and the science behind nutrients found in plants and soil. Students have the opportunity to design an interior space using plants, design bouquets and other arrangements, as well as adopt a plant of their own to care for.

T50041 Environmental Conservation and Forestry (5180)

Open to grades 9, 10, 11, 12

2 semesters, 1 credit per semester (2 semesters required)

Approximate cost per semester: TBD
Recommendation(s): Introduction to Agriculture
Food and Natural Resources
Dual Credit Available

Environmental Conservation and Forestry provides students with a foundation in natural resources. Hands-on learning activities in addition to leadership development, supervised agricultural experience and career exploration encourage students to investigate areas of environmental concern. Students are introduced to the following areas of natural resources; soils, the water cycle, air quality, outdoor recreation, forestry, rangelands, wetlands, animal wildlife, and safety.

T50061 Animal Science (5008)

Open to grades 10, 11, 12

2 semesters, 1 credit per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

Recommendation(s): Intro to Agriculture Food & Natural Resources

Dual Credit Available

This course is a year-long program that provides students with an overview of the field of animal science. Students participate in a large variety of activities and laboratory work including real and simulated animal science experiments and projects. All areas that the students study can be applied to both large and small animals. Topics addressed include: anatomy and physiology, genetics, reproduction, nutrition, aquaculture, careers related to the industry, and management practices for the care and maintenance of animals.

T25501 Advanced Life Science: Animals (5070)

Open to grades 11, 12

2 semesters, 1 credit per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40, NCAA

Recommendation(s): Two years of Core 40/AHD

Science Note: Qualifies toward Core 40 Science credits.

Note: Qualifies for Quantitative Reasoning

Dual Credit Available

This is an interdisciplinary science course that integrates biology, chemistry, and microbiology in an agricultural context. Students formulate, design, and carry out animal-based laboratory and field investigations as an essential course component. They investigate key concepts that enable them to understand animal growth, development, and physiology as it pertains to agricultural science. This course stresses the unifying themes of both biology

and chemistry as students work with concepts associated with animal taxonomy, life at the cellular level, organ systems, genetics, evolution, ecology, and historical and current issues in animal agriculture. Students apply the principles of scientific inquiry to solve problems related to biology and chemistry in highly advanced agricultural applications of animal development.

T25502 Advanced Life Science: Foods (5072)

Open to grades 11, 12

2 semesters, 1 credit per semester (may include travel period)

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40, NCAA

Recommendation(s): Two years of Core 40/AHD

Science Note: Qualifies toward Core 40 Science credits.

Note: Qualifies for Quantitative Reasoning

This two-semester course provides students with opportunities to participate in a variety of activities including laboratory work. This is a standards-based, interdisciplinary science course that integrates biology, chemistry, and microbiology in the context of foods and the global food industry. Students formulate, design, and carry out food-based laboratory and field investigations. Students understand how biology, chemistry and physics principles apply to the composition of foods, the nutrition of foods, food product development, food processing, food safety and sanitation, food packaging and storage. Students will be able to apply the principles of scientific inquiry to solve problems related to biology, physics and chemistry in the context of highly advanced industry applications of food.

BUSINESS CLUSTER

T51011 Personal Financial Responsibility (4540)

Open to grades 10, 11, 12

1 semester, 1 credit

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

Note: Qualifies for Quantitative Reasoning

This course is designed to help a person properly manage money in today's environment. Areas of study include personal financial planning, financial statements, services, budgeting, investments, stocks vs. bonds, insurance protections, credit management, large consumer purchases, and consumer rights and responsibilities. Instructional strategies may include

use of projects, cooperative learning, simulations, real world experiences, guest speakers, internet research, and computer/technology applications.

T51081 Business Law and Ethics (4560)

Open to grades 10, 11, 12

1 semester, 1 credit per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

Dual Credit Available

Students learn about ethics, criminal law, torts, criminal and civil trial procedure, contracts, and wills. Students gain an understanding of these topics through class discussions, creating presentations, research, case studies, mock trials, and guest speakers.

T51061 Introduction to Accounting (4524)

Open to grades 10, 11, 12

2 semesters, 1 credit per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

Note: Qualifies for Quantitative Reasoning

Students learn the introduction to widely accepted accounting principles and procedures. Topics include utilizing GAAP principles within proprietorships, partnerships, and corporations. The entire cycle is covered from opening entries to closing entries. Students will be able to properly prepare balance sheets, income and distribution statements, and owner equity statements. This is an excellent foundational course for anyone considering a career in business or accounting.

T51062 Advanced Accounting (4522)

Open to grades 11, 12

2 semesters, 1 credit per semester (2 semesters required)

Approximate cost per semester: TBD

Required Prerequisites: Intro to Accounting

Meets requirements of: THD, AHD, Core 40

Note: Qualifies for Quantitative Reasoning

Advanced Accounting expands on the Generally Accepted Accounting Principles (GAAP) and procedures for proprietorships and partnerships using double-entry accounting covered in Introduction to Accounting. Emphasis is placed on accounting principles as they relate to both manual and automated financial systems. This course involves understanding, analyzing, and recording business transactions and preparing, analyzing, and interpreting financial reports as a basis for decision-making. Students are required to take Introduction to Accounting prior to enrollment in this course.

T51062 Banking and Investment Capstone (5258)

Open to grades 11, 12

2 semesters, 1 credit per semester (2 semesters required)

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

Prerequisite: Introduction to Accounting (must attain a C or higher)

Dual Credit Available

Note: Qualifies for Quantitative Reasoning

This course addresses the need of schools in areas that have workforce demand in the finance industry. It analyzes and synthesizes high-level skills needed for a multitude of careers in the banking and investment industry. Students learn banking, investments and other finance fundamentals and applications related to financial institutions, business and personal financial services, investment and securities, risk management products, and corporate finance. The course provides students with work based learning experiences to acquire and apply knowledge and skills in one or more careers in the industry.

T51201 Computer Science for Cybersecurity (4801)

Open to grades 9, 10, 11, 12

2 semesters, 1 credit per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

Note: Qualifies for Quantitative Reasoning

Note: Fulfills Core 40 Science credit

Computer Science introduces the structured techniques necessary for the efficient solution of business-related computer programming logic problems and coding solutions, using Python and Linux. The fundamental concepts of programming are provided through explanations and effects of commands, and hands-on utilization of lab equipment to produce accurate outputs. Topics include the CIA Triad, program flow-charting, pseudo coding, and hierarchy charts as a means of solving problems related to security. The course covers creating file layouts, program narratives, user documentation, system flowcharts for business problems, input/output techniques, looping, modules, selection structures, file handling, and offers students an opportunity to apply skills in a laboratory/hands-on environment.

T51141 Principles of Marketing (5914)

Open to grades 11, 12

2 semesters, 1 credit per semester (2 semesters required)

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

Dual Credit Available

This course provides a basic introduction to the scope and importance of marketing in the global economy. Emphasis is placed on oral and written communications, mathematical applications, problem solving, and critical thinking skills as they relate to advertising/promotion/selling, distribution, financing, marketing-information management, pricing and product/service management.

T51091 Principles of Business Management (4562)

Open to grades 11, 12

2 semesters, 1 credit per semester (2 semesters required)

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

Dual Credit Available

This course describes the rewards, benefits and privileges managers might expect in their day to day activities. It also investigates the challenges faced by many managers today. Students learn the characteristics of a good leader. Staying ahead of their rivals, managers must be able to manage diversity in the workplace, globalization, information technology advancements, maintain high ethical standards, and be aware of personal happiness of employees and life goals. Students learn how managers must plan, organize, lead and control all aspects of a business while maintaining effectiveness and efficiency within the organization.

T551131 Sports & Entertainment Marketing (5984)

Open to grades 11, 12

1 semester, 1 credit per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

Prerequisite(s): Principles of Marketing or Principles of Business Management

This course is a specialized marketing course that develops student understanding of the sporting event industries, their economic impact, related products, distribution systems and strategies, pricing considerations, product/service management, and promotion. Students acquire an understanding and appreciation for planning. Throughout the course, students address problem-solving situations for which they must apply critical-thinking skills to create viable solutions. Students have the opportunity to apply newly acquired workplace marketing skills through cooperative projects.

T51231 Marketing in Hospitality and Tourism (5982)

Open to grades 11, 12

1 semester, 1 credit per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

Prerequisite: Principles of Marketing or Principles of Business Management

This course is a specialized marketing course that develops student understanding of marketing in the hospitality, travel, and tourism industry. Students gain knowledge and skills in marketing-information management, pricing, product/service management, promotion, and selling in the hospitality, travel, and tourism industry.

COMMUNICATIONS CLUSTER**T52111 Design Fundamentals (4834)**

Open to grades 9, 10, 11, 12

2 semesters, 1 credit per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

Fulfills a Fine Art credit

Dual Credit is Available

This course introduces students to fundamental design theory. Investigations into design theory and color dynamics will provide experiences in applying design theory, ideas, and creative problem solving in the areas of communication technology using software applications. Student experiences encompass aspects of art in communication, integration of art in communication, and incorporate literacy and presentation skills.

T52022 Graphic Design and Layout (5550)

Open to grades 10, 11, 12

2 semesters, 2 credits per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

Recommendation(s): Design Fundamentals

Dual Credit Available

In this course more emphasis is placed on color and full-color process printing. Larger-sized projects to fit the larger offset presses will also be included. This course also includes organized learning experiences that incorporate a variety of visual art techniques as they relate to the design and execution of layouts and illustrations for advertising, displays, promotional materials, and instructional manuals. Instruction also covers advertising theory and preparation of copy, lettering, posters, and artwork in addition to incorporation of photographic images. Communication skills will be emphasized through the study of effective

methods used to design commercial products that impart information and ideas. Advanced instruction might also include experiences in various printing processes as well as activities in designing product packaging and commercial displays or exhibits.

T52032 Graphic Imaging Technology (5572)

Open to grades 11, 12

2 semesters, 2 credits per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

Prerequisite(s): T52022 Graphic Design and Layout

This course includes organized learning experiences that focus on theory and laboratory activities in prepress, press and finishing operations. Emphasis is placed on elements of design and layout leading to computerized electronic image generation, plate preparation, pressroom operations and finishing techniques. Instructional activities enhance student's language arts skills through the use of proofreading, spelling, and punctuation exercises. The course includes actual production processes in conjunction with classroom assignments embracing the technologies of printing, publishing, packaging, electronic imaging and their allied industries.

T52212 3D Computer Animation & Visualization (5530)

Open to grades 10, 11, 12

2 semesters, 2 credits per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

Recommendation(s): Design Fundamentals

This course introduces and explores three-dimensional animation techniques as used by the animation and graphics industry today. It applies the use of 3-D computer animation, digital video output, and a variety of computer technologies to produce digital images. Course assignments stress the use of current strategies to solve two-dimensional layout and three-dimensional modeling problems. Students are responsible for the design, development and production of a graphics and video-based digital animation product.

T52222 Interactive Media (5232)

Open to grades 11, 12

2 semesters, 2 credits per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

Prerequisite(s): 3D Computer Animation & Visualization

Dual Credit Available

This is the second-year offering to follow 3D Computer Illustration and Graphics. This is a continuation of the first-year program. Animation, modeling, graphics, engineering design, electronic publishing and illustration will be studied in greater detail. Students plan and implement projects approved by the instructor. The projects should demonstrate an advanced level of design competency in computer graphics and be performed in consultation with the teacher and industry advisors.

T52101 Intro to Communications (4790)

Open to grades 9, 10, 11

2 semesters, 1 credit hour per semester

Approximate cost per year: TBD

Meets requirements of THD, AHD, Core 40

Dual Credit

This course sets the foundation for good storytelling by introducing the concepts of radio and television broadcasting. All forms of television field production are taught, including how to properly shoot video, interview subjects, light scenes, write for broadcast, and care for equipment. Students will also learn how to properly edit both video and audio using the Adobe Creative Suite, including Premiere Pro and Audition. Hands-on experience in both the control room and the studio with the Carbonite video switcher, Xpression graphics, the audio mixer, and studio cameras is also included. Radio instruction consists of training on industry standard software (WireReady), scripting for radio, interviewing, and an introduction to podcasting.

T52412 Radio and Television I (5986)

Open to grades 10, 11, 12

***meets at East**

2 semesters, 2 credits per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

Recommendation(s): Introduction to Communications

Dual Credit Available

Note: Student crew members will often be required to cover events outside of the school day.

Radio and Television I provides instruction to develop and enhance competencies in various communication, marketing, media, production, and technical functions and tasks performed by employees, including management personnel in TV broadcasting and telecommunications occupations. Emphasis is placed on production, motion graphics (Adobe CreativeSuite), programming, broadcast writing, broadcast reporting, and broadcast equipment operation. Instructional strategies include hands-on activities where students create commercials, TV broadcasts, sportscasts, new

programs and other production-related projects.

T52422 Radio and Television II (5992)

Open to grades 11, 12

***meets at East**

2 semesters, 2 credits per semester

Meets requirements: THD, AHD, Core 40

Approximate cost per semester: TBD

Recommendation: T52412 Radio & Television 1

Dual Credit Available

Note: Student crew members are often required to spend several hours before and after-school.

Radio and Television 2 continues the instruction to develop and enhance competencies in TV broadcasting and telecommunications occupations. Emphasis is placed on production, motion graphics (Adobe Creative Suite), programming, broadcast writing, broadcast reporting, and broadcast operation. Instructional strategies include hands-on activities where students create commercials, TV broadcasts, sportscasts, new programs, and other production-related projects.

T52432 Radio and Television III (5992)

Open to grade 12

***meets at East**

2 semesters, 2 credit hours per semester

Approximate cost per year: TBD

Meets requirements of: THD, AHD, Core 40

Requirement: T52422 Radio and Television II

Note: Student crew members will often be required to cover events outside of the school day.

Upon successful completion of the first two years of Radio and Television, students may have the opportunity to enroll in this course. This course is designed to advance their skills in the areas of television producing, directing, and on-air delivery. As show producers, R/TV III students will be responsible for the overall content and delivery of all programming. They will schedule event coverage, assign stories, and oversee all projects at various stages. Radio responsibilities will include a scheduled podcast and the Executive Producer Role for morning announcements.

T52612 Radio and Television I: BNN (5986)

T52622 Radio and Television II: BNN (5992)

Open to grades 10, 11, 12

2 semesters, 2 credits per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

Prerequisite(s): Journalism 1

Application, interview and portfolio required for crew positions.

Note: Student crew members are often required to spend several hours before and after-school.

Radio and Television I & II provides instruction to develop and enhance competencies in various communication, marketing, media, production and technical functions and tasks performed by employees, including management personnel in TV broadcasting and telecommunications occupations. Student will participate in the CNHS videos and filmed magazine programs.

COMPUTER TECHNOLOGY CLUSTER

T53111 Information Technology Support (5230)

(Former Title: Computer Tech Support)

Open to grades 9, 10, 11, 12

2 semesters, 1 credit per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

Recommendation(s): Digital Applications and Responsibility or Electronics Computer Technology I

This course allows students to explore how computers work. Students learn the functionality of hardware and software components as well as suggested best practices in maintenance and safety issues. Through hands-on activities and labs, students learn how to assemble and configure a computer, install operating systems and software, and troubleshoot hardware and software problems. Students may earn an industry-based certification at the end of the course.

T51201 Computer Science for Cybersecurity (4801)

Open to grades 9, 10, 11, 12

2 semesters, 1 credit per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

Note: Qualifies for Quantitative Reasoning

Note: Fulfills Core 40 Science credit

Computer Science introduces the structured techniques necessary for the efficient solution of business-related computer programming logic problems and coding solutions, using Python and Linux. The fundamental concepts of programming are provided through explanations and effects of commands, and hands-on utilization of lab equipment

to produce accurate outputs. Topics include the CIA Triad, program flow-charting, pseudo coding, and hierarchy charts as a means of solving problems related to security. The course covers creating file layouts, program narratives, user documentation, system flowcharts for business problems, input/output techniques, looping, modules, selection structures, file handling, and offers students an opportunity to apply skills in a laboratory/hands-on environment.

T51211 Cybersecurity I (5253)

Open to grades 10, 11, 12

Required: Computer Science for Cybersecurity for Perkins V Pathway

2 semesters, 1 credit hour per semester

Approximate cost per semester: TBD

Meets requirements of: THD, AHD, Core 40

Note: Qualifies for Quantitative Reasoning

Note: Fulfills Core 40 Science credit

In this course, students learn and practice skills necessary to perform the role of a Cybersecurity Specialist. Students will discuss the evolution of information security into cybersecurity and the relationship of cybersecurity to nations, businesses, society, and people. Laboratory and classroom components are used to cover key elements such as information security, systems security, network security, mobile security, and defense and mitigation techniques. The core concepts of confidentiality, integrity, and availability are covered. Students will be exposed to multiple cybersecurity technologies and learn how to analyze the threats, vulnerabilities, and risks present in these environments. Students will also develop strategies to mitigate potential cybersecurity problems. Students will utilize the Project Lead the Way curriculum and have multiple opportunities to compete in state and national competitions.

T51221 Cybersecurity II (5253)

Open to grades 11, 12

Required: Computer Science for Cybersecurity and Cybersecurity I

2 semesters, 1 credit hour per semester

Approximate cost per semester: TBD

Meets requirements of: THD, AHD, Core 40

Note: Qualifies for Quantitative Reasoning

Note: Fulfills Core 40 Science credit

Cybersecurity II introduces the secure software development process, including designing secure applications, writing secure code designed to withstand various attacks, and security testing and auditing. It focuses on the security issues a developer faces, common security vulnerabilities and flaws, and security threats. The course explains security

principles, strategies, coding techniques, and tools that can help make software fault tolerant and resistant to attacks. Students will write and analyze code that demonstrates specific security development techniques. Students will also learn about cryptography as an indispensable resource for implementing security in real-world applications. Students will learn the foundations of cryptography using simple mathematical probability. Information theory, computational complexity, number theory, and algebraic approaches will be covered.

T51231 Cybersecurity III (5253)

Open to grade 12

Required: Computer Science for Cybersecurity and Cybersecurity I and II

2 semesters, 1 credit hour per semester

Approximate cost per semester: TBD

Meets requirements of: THD, AHD, Core 40

Note: Qualifies for Quantitative Reasoning

Note: Fulfills Core 40 Science credit

Cybersecurity III Capstone will showcase students' knowledge in designing secure applications, writing secure code designed to withstand various attacks, and security testing and auditing. It focuses on educating and explaining the security issues a developer faces, common security vulnerabilities and flaws, and security threats to end users. Students will further their understanding of cryptography using mathematical probability.

T53112 Networking 1 (5234)

Open to grades 10, 11, 12

2 semesters, 2 credits per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

Recommendation: Information Technology Support (formerly Computer Tech Support)

Networking Fundamentals introduces students to concepts of local and wide area networks, home networking, networking standards using the IEEE/OCI Model, network protocols, transmission media and network architecture/topologies. Security and data integrity are introduced and emphasized throughout this course. The purpose of this course is to offer students the critical information needed to successfully move into a role as an IT professional supporting networked computers. Concepts covered include TCP/IP client administration, planning a network topology, configuring the TCP/IP protocol, managing network clients, configuring routers and hubs as well as creating a wireless LAN.

T53122 Networking 2: Servers (4588)

Open to grades 11, 12

2 semesters, 2 credits per semester

Approximate cost per semester: TBD

Meets requirements of: THD, AHD, Core 40

Prerequisites: Networking 1

Networking 2: Servers focuses on learning the fundamentals of networking, routing, switching and related protocols. In this course, students learn both the practical and conceptual skills that build the foundation for understanding basic networking, routing and switching. Students are introduced to the two major models used to plan and implement networks: OSI and TCP/IP. The OSI and TCP/IP functions and services are examined in detail. Students will learn how a router addresses remote networks and determines the best path to those networks, employing static and dynamic routing techniques.

CONSTRUCTION ENGINEERING TECHNOLOGY CLUSTER

T54001 Introduction to Architecture (5640)

Open to grades 9, 10, 11, 12

2 semesters, 1 credit per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

This course introduces students to the fundamental design and development aspects of architectural planning activities. Application and design principles are used in conjunction with mathematical and scientific knowledge. Computer software programs should allow students opportunities to design, simulate, and evaluate the construction of buildings and communities. Activities include the preparation of cost estimates as well as a review of regulatory procedures that would affect project design.

T54012 Architectural Drafting and Design I (5640)

Open to grades 10, 11, 12

2 semesters, 1 credit per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

**Recommendation(s): Introduction to Architecture, Introduction to Industrial Technology
Dual Credit Available**

This course provides students with a basic understanding of the detailing skills commonly used by a drafting technician. Areas of study include: lettering, sketching, proper use of equipment, geometric constructions with emphasis on orthographic

(multiview) drawings that are dimensioned and noted to ANSI standards. This course includes the creation and interpretation of construction documents. Methods of geometric construction, three dimensional drawing techniques, and sketching will be presented as well as elementary aspects of residential design and site work. Areas of emphasis include print reading and drawing. Another purpose of this course is to provide students with a basic understanding of the features and considerations associated with the operation of a computer-aided design (CAD) system. Students gain valuable hands-on experience with AutoCAD.

T54022 Architectural Drafting and Design II (5652)

Open to grades 11, 12

2 semesters, 2 credits per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

**Prerequisite(s): Architectural Drafting & Design 1
Dual Credit Available**

Note: Qualifies for Quantitative Reasoning

This course presents a history and survey of architecture and focuses on creative design of buildings in a studio environment. Covers problems of site analysis, facilities programming, space planning, conceptual design, proper use of materials, selection of structure and construction techniques. Develops presentation drawings, and requires oral presentations and critiques. Generation of form and space is addressed through basic architectural theory, related architectural styles, design strategies, and a visual representation of the student's design process. Advanced CAD enables students to make the transition from 2D drafting to 3D modeling. Various architectural software packages and application may be used.

T54111 Introduction to Construction (4792)

Open to grades 9, 10, 11, 12

2 semesters, 1 credit per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

This course offers hands-on activities and real world experiences related to the skills essential in residential, commercial and civil building construction. During the course, students are introduced to the history and traditions of construction trades. Students also learn and apply knowledge of the care and safe use of hand and power tools as related to each trade. In addition, students are introduced to blueprint reading, applied math, basic tools and equipment, and safety. Students will demonstrate building construction techniques, including concrete and masonry, framing,

electrical, plumbing, drywalling, HVAC, and painting as developed locally in accordance with available space and technologies. They also investigate topics related to the purchasing and maintenance of structures, special purpose facilities, green construction and construction careers.

T54112 Construction Trades I (5580)

Open to grades 10, 11, 12

2 semesters, 2 credits per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

**Recommendation(s): Introduction to Construction
Dual Credit Available**

This course includes classroom and laboratory experiences covering the formation, installation, maintenance, and repair of buildings, homes, and other structures. This course also covers the use of working drawings and applications from the print to the work. Students explore the relationship of views and details, interpretation of dimension, transposing scale, tolerance, electrical symbols, sections, materials list, architectural plans, geometric construction, three dimensional drawing techniques, and sketching. Elementary aspects of residential design and site work will also be covered. Areas of emphasis will include print reading and drawing, room schedules and plot plans. Students will develop an understanding and interpretation of the Indiana Residential Code for one and two-family dwellings and safety practices including Occupational Safety and Health Administration's Safety & Health Standards for the construction industry.

T54122 Construction Trades II (2 hour) (5578)

T54123 Construction Trades II (3 hour) (5578)

Open to grades 11, 12

2 semesters, 2/3 credits per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

**Prerequisite(s): Construction Trades I
Dual Credit Available**

This course builds on the topics covered in Construction Trades I and includes: formation, installation, maintenance, and repair of buildings, homes, and other structures including recent trends in the residential construction industry. Information is presented concerning materials, occupations, and professional organizations within the industry. Students will develop basic knowledge, skills, and awareness of interior trim. It provides training in installation of drywall, moldings, interior doors, kitchen cabinets, and baseboard moldings. Students also

develop skills in the finishing of building exteriors. They also explore skills in the installation of cornices, windows, doors and various types of sidings used in today's marketplace. Additionally, the course covers design and construction of roof systems and using framing squares for traditional rafter and truss roofing.

T54212 Construction Trades: Electrical I (2 hour) (4830)

T54213 Construction Trades: Electrical I (3 hour) (4830)

Open to grades 11, 12

2 semesters, 2/3 credits per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

**Prerequisite(s): Construction Trades II
Dual Credit Available**

This course includes classroom and laboratory experiences emphasizing the operation, maintenance and safe use of various tools including the builder's level and transit. It also covers the history of building construction to present-day applications emphasizing future trends and construction as a career. It provides instruction and practice in the use of working drawings and applications from blueprint to worksite. Students examine relationship of views and details, interpretation of dimension, transposing scale, tolerance, electrical symbols, sections, materials list, architectural plans, room schedules and plot plans. It covers both AC and DC circuits. Students will use mathematical principles to solve electrical problems and to troubleshoot electrical circuits.

T54222 Construction Trades: Electrical II (2 hour) (4832)

T54223 Construction Trades: Electrical II (3 hour) (4832)

Open to grade 12

2 semesters, 2/3 credits per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

**Prerequisite(s): Construction Trades: Electrical I
Dual Credit Available**

Note: Qualifies for Quantitative Reasoning

This course includes classroom and laboratory experiences concerned with the practice of residential wiring, including electrical service, metering equipment, lighting, switches, outlets and other common components, and methods of installation and maintenance of the residential wiring system in accordance with the current National Electrical Code. Studies include mechanical installation of hardware as well as electrical design and layout. This course also focuses on tool use, wiring methods, and material

selection and installation for commercial and industrial wiring systems.

ENGINEERING MANUFACTURING TECHNOLOGY CLUSTER

Project Lead The Way: A Pre-Engineering Program

PLTW's Pathway to Engineering (PTE) is designed to encompass all four years of high school. Courses are centered on activities that are hands-on and project-based. Students develop critical thinking and problem solving skills while using the same industry-leading 3D design software used by companies like Intel, Lockheed Martin, and Pixar.

They explore aerodynamics, manufacturing, and alternative energy, and apply biological and engineering concepts related to biomechanics – think robotics. Students design, test, and actually construct circuits and devices such as smartphones and tablets. They work collaboratively on a culminating capstone project.

Project Lead The Way courses have dual credit options with several universities across the country. See a PLTW instructor or go to: www.pltw.org for complete information.

T55071 PLTW: Introduction to Engineering Design (4802)

Open to grades 9, 10, 11, 12

2 semesters, 1 credit per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

Recommendation(s): Algebra

Dual Credit Available

This is an introductory course which develops student problem solving skills using the design process.

Students document their progress of solutions as they move through the design process. Students develop solutions using elements of design and

manufacturability concepts. They develop hand sketches using 2D and 3D drawing techniques. Computer Aided Design (CAD).

T55081 PLTW: Principles of Engineering (5644)

Open to grades 10, 11, 12

2 semesters, 1 credit per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

Recommendation(s): Introduction to Engineering

Design or Instructor Approval, Algebra I and Geometry

Dual Credit Available

Note: Qualifies for Quantitative Reasoning

This course focuses on the process of applying engineering, technological, scientific and mathematical principles in the design, production, and operation of products, structures, and systems. It is designed to provide students interested in engineering careers to explore experiences related to specialized fields such as civil, mechanical, and materials engineering. Students will engage in research, development, planning, design, production, and project management to simulate a career in engineering. The topics of ethics and the impacts of engineering decisions are also addressed. Classroom activities are organized to allow students to work in teams and use modern technological processes, computers, CAD software, and production systems in developing and presenting solutions to engineering problems.

T55051 PLTW: Computer Integrated Manufacturing (5534)

Open to grades 11, 12

2 semesters, 1 credit per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

Recommendation(s): Introduction to Engineering Design, Principles of Engineering

Dual Credit Available

Note: Qualifies for Quantitative Reasoning

This course applies principles of rapid prototyping, robotics, and automation. This course builds upon the computer solid modeling skills developed in Introduction of Engineering Design. Students will use computer controlled rapid prototyping and CNC equipment to solve problems by constructing actual models of their three-dimensional designs. Students will also be introduced to the fundamentals of robotics and how this equipment is used in an automated manufacturing environment. Students will evaluate their design solutions using various techniques of analysis and make appropriate modifications before producing their prototypes.

T55061 PLTW: Digital Electronics (5538)

Open to grades 11, 12

2 semesters, 1 credit per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

Recommendation(s): Introduction to Engineering Design, Principles of Engineering

Dual Credit Available

Note: Qualifies for Quantitative Reasoning

This is a course of study in applied digital logic that encompasses the design and application of electronic circuits and devices found in video games, watches, calculators, digital cameras, and thousands of other devices. Instruction includes the application of engineering and scientific principles as well as the use of Boolean algebra to solve design problems. Using computer software that reflects current industry standards, activities should provide opportunities for students to design, construct, test, and analyze simple and complex digital circuitry software will be used to develop and evaluate the product design. This course engages students in critical thinking and problem-solving skills, time management and teamwork skills.

T55501 Introduction to Industrial Technology (4800)

Open to grades 9, 10, 11, 12

2 semesters, 1 credit hour per semester

Approximate cost per semester: TBD

Meets requirements of: THD, AHD, Core 40

This course specializes in using modern technological processes, computers, design, and production systems in the production of products and structures through the use of automated production systems. Emphasis is placed on using modern technologies and on developing career-related skills for electronics, manufacturing, precision machining, welding, and architecture career pathways. Students apply ingenuity using tools, materials, processes, and resources to create solutions applied in electronics, manufacturing, precision machining, welding, and architecture. Course content should address major technological content related to topics such as architectural drawing and print design, design documentation using CAD systems, assignments involving the interface of CAD, CNC, CAM, and CIM technologies, computer simulation of products and systems, publishing of various media, animation and related multimedia applications, 3-D modeling of products or structures, digital creating and editing of graphics and audio files, control technologies, and automation in the modern workplace.

T55511 Introduction to Manufacturing (4784)

Open to grades 9, 10, 11, 12

2 semesters, 1 credit per semester

Approximate cost per semester: TBD

Meets requirements of: THD, AHD, Core 40

This course specializes in how people use modern manufacturing systems with an introduction to

manufacturing technology and its relationship to society, individuals, and the environment. An understanding of manufacturing provides a background toward developing engineering & technological literacy, developed through the study of the two major technologies, material processing and management technology, used by all manufacturing enterprises. Students will apply the skills and knowledge of using modern manufacturing processes to obtain resources and change them into industrial materials, industrial products and consumer products. Students will investigate the properties of engineered materials such as metallics, polymers, ceramics, and composites. After gaining a working knowledge of these materials, students will study six major types of material processes: casting and molding, forming, separating, conditioning, finishing, and assembling.

T55111 Mechanical Drafting CAD/CAM (4836)

Open to grades 10, 11, 12

2 semesters, 1 credit hour per semester

Approximate cost per semester: TBD

Recommendation(s): Intro to Engineering Design, OR Precision Machining II, OR Computer Integrated Manufacturing, OR Intro to Industrial Technology, OR Intro to Manufacturing

This course provides students with a basic understanding of the skills commonly used by engineers to design and prototype parts. Areas of study include: computer-aided drafting, three dimensional modeling, working drawings, machine tool programming, and machine tool set-up. Students will gain valuable hands-on experience with CAD/CAM software and a variety of automated machine tools. They will be expected to complete several projects (increasing in difficulty) relating to product design and development, automated programming, and operation of machine tools. Mechanical Drafting CAD/CAM is a project-based, hands-on introduction for students interested in advanced manufacturing careers.

T55612 Industrial Automation & Robotics I (5610)

Open to grades 10, 11, 12

2 semesters, 2 credit per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

Recommendation(s): Introduction to Manufacturing, Computers in Design and Production, PLTW Introduction to Engineering Design

Dual Credit Available

Industrial Automation & Robotics I will be a two-hour course that introduces students to curriculum covering

the multi-craft skills needed by industrial technicians to complete the complex and varied tasks for the career. The year one curriculum will include OSHA 10 safety certification; basic electricity including electrical laws and principles of DC and AC currents; the basic theory, operation and programming of automated manufacturing systems; the basic principles and practices of mechanical technology; the common types of electrical wiring circuits used for power and control of electrical devices and motors used in manufacturing; and the common types of electrical wiring circuits used for power and control of electrical devices and motors used in advanced manufacturing. The year one curriculum will include General Industry: OSHA 10 safety certification.

T55622 Industrial Automation and Robotics II (5612)

Open to grades 11, 12

2 semesters, 2 credits per semester

Approximate cost per semester: TBD

Meets requirements of: THD, AHD, Core 40

Recommendation(s): Introduction to Manufacturing, Introduction to Industrial Technology, PLTW Introduction to Engineering Design

Required Prerequisite: Industrial Automation and Robotics I

Dual Credit Available

Note: Qualifies for Quantitative Reasoning

Industrial Automation and Robotics II includes the study of industrial robots, programming PLC's, automating cells, advanced programming and designing/building task oriented robots. Students will engage in active learning, critical thinking and problem solving through advanced robotic procedures and processes. Students will learn industrial robotic programming languages, strategies for automating to improve efficiencies and be introduced to advanced programming language that is common in global industry. Students will study basic computer numerical controlled (CNC) machining and will combine automation and CNC machining. They will apply information in real world situations to create working solutions and will complete projects, including building robots to perform tasks in autonomous mode and analyze their own career pathway in this sector.

T55212 Electronics and Computer Technology I (5684)

Open to grades 10, 11, 12

2 semesters, 2 credits per semester

Approximate cost per semester: TBD

Meets requirements of: THD, AHD, Core 40

Recommendation(s): (IT) Information Communications and Technology, Computers in Design and Production, PLTW Introduction to Engineering Design **Dual Credit Available**

This course introduces students to the fundamental electronic concepts necessary for entry into an electronic and computer systems career pathway, which will culminate with industry certifications or additional post-secondary education. Classroom and laboratory experiences will allow students to begin their career preparation in the fundamental electronics concepts of Jobsite Skills, DC Basics, AC Basics, and Personal Computer Design, and will incorporate safety, technical writing, mathematical concepts, and customer service.

T55222 Electronics and Computer Technology II (5694)

Open to grades 11, 12

2 semesters, 2 credits per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

Prerequisite(s): Electronics & Computer Technology I

Dual Credit Available

Note: Qualifies for Quantitative Reasoning.

This course provides opportunity for students to continue with foundational electronic concepts including circuit analysis and digital electronics modules. After completing the two additional foundational modules, student may choose to focus on one of the optional modules including more intense instruction, research, specialized projects, and internships. The optional modules include industrial technology, emerging electronic technologies, residential and commercial electronic communication, and automation. Classroom, laboratory, and work-based experiences in the fundamental electronics concepts of circuit analysis and digital electronics as well as one of the optional modules incorporate safety, technical writing, mathematics, and customer service.

T55232 Electronics and Computer Technology III (5694)

Open to grade 12

2 semesters, 2 credits per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

Prerequisite(s): Electronics & Computer Technology II with a C or better

Upon successful completion of the first two years of Electronics Technology, students may be eligible for this course, involving laboratory activities in advanced

digital circuitry, microprocessors, personal computer troubleshooting and repair, and programmable controller applications. Emphasis is on the design, circuit analysis, and troubleshooting of these circuits. Opportunities for leadership skills, exposure to working in a team based work system and applications of technology will be given through participation with Skills USA. Qualified students may be eligible to participate in a School-To-Work placement.

T55312 Precision Machining I (5782)

Open to grades 10, 11, 12

2 semesters, 2 credits per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

**Recommendation(s): Introduction to Industrial Technology, Introduction to Manufacturing
Dual Credit Available**

Note: Qualifies as a Quantitative Reasoning course for the General diploma only.

This course provides students with a basic understanding of the precision machining processes used in industry, manufacturing, maintenance, and repair. The course instructs the student in industrial safety, terminology, tools and machine tools, measurement and layout. Students will become familiar with the setup and operation of power saws, drill presses, lathes, milling machines, grinders, and an introduction to CNC machines.

T55322 Precision Machining II (5784)

Open to grades 11, 12

2 semesters, 2 credits per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

**Prerequisite(s): Precision Machining I
Dual Credit Available**

Note: Qualifies for Quantitative Reasoning

This course is a more in-depth study of skills learned in Precision Machining I with a stronger focus in CNC setup, operation, and programming. Classroom activities concentrate on precision set-up and inspection work as well as machine shop calculations. Students develop skills in advanced machining and measuring parts involving tighter tolerances and more complex geometry. A continued focus on safety is also included.

T55332 Precision Machining III (5784)

Open to grade 12

2 semesters, 2 credits per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

Prerequisite(s): Precision Machining II with a C or

better

Upon successful completion of the first two years of Precision Machining, students may be eligible to participate in a course where the student studies advanced lathe work, milling operations, surface grinding, and computerized numerical control milling. Precision measurement, advanced blueprint reading, and industrial math are also taught. CNC programming and operating are taught first, second, and third year. Job opportunities in machine trades are tremendous. Qualified students are eligible for a school-to-work placement in the community.

T55412 Welding Technology I (5776)

Open to grades 10, 11, 12

2 semesters, 2 credits per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

**Recommendation(s): Introduction to Industrial Technology, Introduction to Manufacturing
Dual Credit Available**

This course includes classroom and laboratory experiences that develop a variety of skills in oxy-fuel cutting and Shielded Metal Arc welding (SMAW). This course is designed for individuals who intend to make a career as a Welder, Technician, Sales, Designer, Researcher, or Engineer. Emphasis is placed on safety at all times. OSHA standards and guidelines endorsed by the American Welding Society (AWS) are used. Instructional activities emphasize properties of metals, safety issues, blueprint reading, electrical principles, welding symbols, and mechanical drawing through projects and exercises that teach students how to weld and to be prepared for college and career success.

T55422 Welding Technology II (5778)

Open to grades 11, 12

2 semesters, 2 credits per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

**Prerequisite(s): Welding Technology I
Dual Credit Available**

Welding Technology II builds on the gas metal arc welding (GMAW), flux-cored arc welding (FCAW), gas tungsten arc welding (GTAW), plasma cutting, and carbon arc skills covered in Welding Technology I. Emphasis is placed on safety at all times. OSHA standards and guidelines endorsed by the American Welding Society (AWS) are used. Instructional activities emphasize properties of metals, safety issues, blueprint reading, electrical principles, welding symbols, and mechanical drawing through projects and exercises that teach students how to weld and be prepared for college and career success.

T55432 Welding Technology III (5778)

Open to grade 12

2 semesters, 2 credits per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

Prerequisite(s): Welding Technology II with a C or better.

Upon successful completion of the first two years of welding, students may be eligible to participate in a course where the student will be prepared for Advanced Placement and/or advanced welding techniques. Lab activities are patterned after a project-oriented job shop and students will be graded on the quality of projects that they get done and/or their Advanced Placement evaluations. As advanced students, they will be overseeing younger students and learning management skills and team building efforts. At the end of the third year of welding, an AWS welding certification is offered at the student's expense. This certificate can be used to fulfill requirements for a Technical Honors Diploma.

HEALTH SCIENCES CLUSTER

Project Lead the Way (PLTW): Biomedical Sciences

The Project Lead the Way Biomedical Sciences program is a dynamic high school program which uses real-world problems to engage and challenge students. Students interested in math, science and the human body will find the PLTW Biomedical Sciences program a great introduction to numerous medical fields. It also teaches how the skills they learn are used in the biomedical sciences.

T56101 PLTW Principles of the Biomedical Sciences (5218)

Open to grades 9, 10, 11, 12

2 semesters, 1 credit per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

Prerequisites: Enrolled in Biology, college prep math and science

Science Note: This course counts towards Core 40 science credits.

Students explore the concepts of human medicine and are introduced to research processes using applied math and science to solve problems. Hands-on, interactive projects enable students to investigate human body systems and various health conditions, including heart disease, diabetes, sickle-cell disease, hypercholesterolemia and infectious diseases. Key biological concepts include homeostasis, metabolism, inheritance of traits, feedback systems and defense

against disease. Engineering principles such as the design process, feedback loops, fluid dynamics and the relationship of structure to function will be included where appropriate.

T56201 PLTW Human Body Systems (5216)

Open to grades 10, 11, 12

2 semesters, 1 credit per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

Prerequisites: PLTW Principles of the Biomedical Sciences, college prep math and science

Science Note: This course counts towards Core 40 science credits.

Students learn anatomy and physiology of the human body through a hands-on approach. Using real-world cases, students take the role of a biomedical professional and work together to solve medical mysteries. Hands-on, interactive projects include designing experiments, investigating the function and structures of the human body through dissections, clay modeling, laboratory analysis, and using data acquisition software to monitor body functions such as reflex, muscle movement, and lung capacities. Students learn to assess and monitor body systems and how they work together.

T56301 PLTW Medical Interventions (5217)

Open to grades 11, 12

2 semesters, 1 credit per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

Prerequisites: Principles of the Biomedical Sciences, Human Body Systems

Science Note: This course counts towards Core 40 science credits.

Students investigate various medical interventions that extend and improve the quality of life including gene therapy, pharmacology, surgery, prosthetics, rehabilitation and supportive care. The course explores the design and development of various medical interventions such as vascular stents, cochlear implants, and prosthetic limbs. In addition, students review the history of organ transplants and gene therapy and stay updated on cutting-edge developments via current scientific literature. Using 3D imaging, data acquisition software and current scientific research, students design a product that can be used as a medical intervention.

T56401 PLTW Biomedical Innovation (5219)

Open to grade 12

2 semesters, 1 credit per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

Prerequisites: Principles of the Biomedical Sciences, Human Body Systems, and Medical Interventions

Dual Credit Available if student successfully completes all four courses in the pathway.

Science Note: This course counts towards Core 40 science credits.

Note: With approval, qualified PLTW student may use this project for their Senior Project at CEHS and CNHS.

Biomedical Innovation is the fourth and final Project Lead the Way Biomedical Science course. It is intended to follow the third course, Medical Interventions. In this capstone course students will design and conduct experiments related to the diagnosis, treatment, and prevention of disease or illness. They will apply their knowledge and skills to answer questions or to solve problems related to the biomedical sciences. They will work to design an effective emergency room, explore human physiology, and design a medical innovation. A theme through the course is to determine the factors that led to the death of a fictional person. Through this approach, students will investigate public health issues and forensic autopsy to determine preventative strategies for prolonging a person's life. They may work with a mentor or advisor from a university, hospital, physician's office, or industry as they complete class projects.

T56211 Medical Terminology (5274)

Open to grades 11, 12

1 semester, 1 credit per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

Prerequisite(s): Biology

Dual Credit Available

Learn a new language in this one semester elective. Students will learn to define and use medical terminology correctly and will become proficient in pronouncing and spelling medical terms. Students will utilize videos, presentations, and hands-on experiences to enhance learning. This course will provide a solid foundation in medical terminology for any student considering a career in health science.

T56612 Dental Careers I (5203)

Open to grades 10, 11, 12

2 semesters, 2 credit hours per semester

Approximate cost per semester: TBD

Meets requirements of: THD, AHD, Core 40

Recommendation(s): T56101 PLTW Principles of the Biomedical Sciences, OR T56201 PLTW Human Body Systems

Dual Credit Available

This course provides entry-level training for a career in the profession of dentistry. Dental Careers I offers hands-on experience as well as classroom instruction. Emphasis is placed on the clinical environment, chairside procedures, dental materials, placing restorations, equipment and instrument identification, tray set-ups, sterilization, and characteristics of microorganisms and disease control. In addition, oral, head and neck anatomy, basic embryology, histology, tooth morphology, charting dental surfaces, and illness are all introduced. Simulated in-school laboratories are included to provide opportunities for students to further develop clinical skills and the appropriate ethical behavior. Students will have the opportunity to complete a 4-8 hour dental office observation during this course.

T56622 Dental Careers II (5204)

Open to grades 11, 12

2 semesters, 2 credit hours per semester

Approximate cost per semester: TBD

Meets requirements of: THD, AHD, Core 40

Required Prerequisite(s): T56612 Dental Careers I
Dual Credit Available

This course provides the student with more extensive training as a Dental Professional. There is an excellent opportunity for increased skill development in clinical support and business office procedures. The student will perform more complex procedures during in our simulated laboratory, such as placing restorations, Orthodontics, Endodontics, Radiography, surgical, Prosthodontics, and Periodontal specialty skills and procedures. Students may be eligible to participate in an off-campus **externship experience** in a local dental office during second semester.

T56632 Dental Careers III (5204)

Open to grade 12

2 semesters, 2 credit hours per semester

Approximate cost per semester: TBD

Meets requirements of: THD, AHD, Core 40

Required Prerequisite(s): T56612 Dental Careers I, AND T56622 Dental Careers II

Dual Credit Available

Upon successful completion of the first two years of Dental Careers, students may be eligible to participate in this course that advances their skills through a community placement and specialized skill training. Students have the opportunity to acquire a provisional radiology permit, allowing them to perform limited radiologic procedures. Clinical placement begins early in the school year and continues until the end of the year. This is a wonderful opportunity for students to gain in-depth exposure to the dental field and solidify a strong foundation for transitioning into post-secondary programs or career placement.

T56712 Health Science Education I: Nursing (5282)

Open to grades 10, 11, 12

2 semesters, 2 credit hours per semester

Approximate cost per semester: TBD

Meets requirements of: THD, AHD, Core 40

Recommendation(s): T56101 PLTW Principles of the Biomedical Sciences, OR T56201 PLTW Human Body Systems

Dual Credit Available

This course provides entry-level training in nursing assisting and introduction to medical assisting. At the completion of this course, students may receive certification as a Certified Nursing Assistant (CNA) through the Indiana State Department of Health. Students may receive certification in CPR/AED for the Professional Rescuer. During the school year, students learn hands-on skills in the classroom and simulated laboratory. These skills include infection control measures, patient hygiene, nutrition, vital signs, patient movement, etc. Following training on the skills mentioned above, students receive clinical (on-the-job) experience in nursing or continue in the classroom for introduction to medical assisting. Clinical placement is designed to allow the student to gain clinical experience towards the 75 hours required for the state CNA exam. Following the first year of introduction to medical assisting, the student is given the opportunity to continue to nursing year II. The student will then complete the required skills to have the opportunity to study for the certification exam to become a medical assistant. The first year of the nursing program provides a wide range of entry-level health care skills that gives students a solid foundation for transitioning into post-secondary programs or career placement.

T56722 Health Science Education II: Nursing (5284)

Open to grades 11, 12

2 semesters, 2 credits per semester

Approximate cost per semester: TBD

Meets requirements of: THD, AHD, Core 40 Required Prerequisite(s): T56712 Health Science Education I: Nursing

This course offers an overview of human anatomy, physiology, disease process, and treatment with an emphasis on healthcare employability skills, teamwork, and communication.

Students have an opportunity to learn advanced skills and explore a variety of nursing and allied health careers. Through a combination of course work and clinical (on-the-job) experience closely related to the area of their interest(s), students are given the opportunity to test to become an NHA Certified Clinical Medical Assistant (CCMA). Clinical placement begins early in the school year and continues through the end of the year. Nursing II offers a wonderful opportunity for students to create custom training (on-the-job), unique to their specific interests, while enhancing their foundation for advanced employment and/or post-secondary education in the health career fields.

T56732 Health Science Education III: Nursing (5284)

Open to grade 12

2 semesters, 3 credits per semester

Approximate cost per semester: TBD

Meets requirements of: THD, AHD, Core 40

Required Prerequisite(s): T56722 Health Science Education II: Nursing

Upon successful completion of the first two years of Nursing, students may be eligible to participate in this course, which advances their skills through a community placement and specialized skill training. Clinical placement begins early in the school year and continues until the end of the year. This is a wonderful opportunity for students to gain in-depth exposure to the nursing field and solidify a strong foundation for transitioning into post-secondary programs or career placement.

T56512 Veterinary Careers I (5211)

Open to grades 10, 11, 12

2 semesters, 2 credit hours per semester

Approximate cost per semester: TBD

Meets requirements of: THD, AHD, Core 40

Recommendation(s): T50061 Animal Science, OR T25501 Advanced Life Science: Animals, OR T56101 PLTW Principles of the Biomedical Sciences, OR T56201 PLTW Human Body Systems, OR T56211 Medical Terminology

This course provides entry level training as a Veterinary Assistant for students pursuing careers as Veterinarians, Veterinary Technicians, or other careers involving animals. The focus of the first semester is classroom and laboratory training. The

student will have the opportunity to practice assisting with the physical exam, veterinary nursing care, animal restraint, and assisting with surgical procedures. Second semester students will have the opportunity to receive clinical (on-the-job) training within the professional community. Clinical training placements are at off-campus locations that may include veterinary offices, animal shelters, humane societies, groomers, and animal behavior and training facilities. Students have the opportunity to receive certification in CPR/AED for the Professional Rescuer.

T56522 Veterinary Careers II (5212)

Open to grades 11, 12

2 semesters, 2 credit hours per semester

Approximate cost per semester: TBD

Meets requirements of: THD, AHD, Core 40

Required Prerequisite(s): T56512 Veterinary Careers I

This course curriculum offers medical office training. Students also have the opportunity to advance learning in the veterinary field through clinical (on-the-job) training, depending on instructor approval. Clinical placement begins early in the school year and continues until the end of the year. This course offers a excellent opportunity for students to gain in-depth exposure to their potential health career as well as providing a solid foundation for employment and college/technical education.

T56532 Veterinary Careers III (5212)

Open to grade 12

2 semesters, 2 credit hours per semester

Approximate cost per semester: TBD

Meets requirements of: THD, AHD, Core 40

Required Prerequisite(s): T56522 Veterinary Careers II

Upon successful completion of the first two years of veterinary careers, students may be eligible to participate in this course that advances their skills through a community placement and specialized skill training. Clinical placement begins early in the school year and continues until the end of the year. This is a wonderful opportunity for students to gain in-depth exposure to the veterinary field and solidify a strong foundation for transitioning into post-secondary programs or career placement.

HUMAN SERVICES CLUSTER

T57321 Interpersonal Relationships (5364)

Open to grades 9, 10, 11, 12

1 semester, 1 credit per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

This course addresses essential knowledge and skills needed for positive and productive relationships in all career areas, community, and family settings. Designed for teens that would like a better understanding of human behavior through knowing themselves as individuals, topics include communication skills, career goals, self-esteem, relationships, values clarification, and conflict resolution. This is one of three (3) classes that may be taken as a group in lieu of Health & Safety.

T57351 Adult Roles and Responsibilities (5330)

Open to grades 11, 12

1 semester, 1 credit per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

Adult Roles and Responsibilities is recommended as a career sequence course for students with interest in family and community services, personal and family finance, and similar areas. This course is designed to equip students with knowledge and skills needed to successfully handle the daily living challenges of adult life. Students develop skills to build more meaningful, lasting relationships. They will explore many of the issues that challenge the individual and family in today's society. Students complete projects and class activities that involve consumer decision-making about housing, clothing, nutrition and wellness, transportation and financial management.

T57391 Sports Nutrition and Wellness (5340)

Open to grades 9, 10, 11, 12

2 semesters, 1 credit per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

Sports Nutrition and Wellness is a course which provides an extensive study of nutrition. This course is an especially appropriate course for students interested in careers in the medical field, athletic training, and dietetics. The emphasis on sports is designed to benefit the nutritional needs for all students, but especially athletes. Topics include simple food preparation, individual dietary needs, nutrition information and analysis, and pre-game and recovery foods and drinks to sustain top performance in athletic activities.

T25502 Advanced Life Science: Foods (5072)

Open to grades 11, 12

2 semesters, 1 credit per semester; May include travel period

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40, NCAA

Recommendation: Two years of Core 40/AHD Science

Note: This course counts toward Core 40 Science credits.

Note: Qualifies for Quantitative Reasoning

Advanced Life Science: Foods is a two-semester course that provides students with opportunities to participate in a variety of activities, including laboratory work. This is an interdisciplinary science course that integrates biology, chemistry, and microbiology in the context of foods and the global food industry. Students formulate, design and carry out food base laboratory and field investigations as an essential course component. Students understand how biology, chemistry, and physics principles apply to the composition of foods, the nutrition of foods, food and food product development, food processing, food safety and sanitation, food packaging and food storage. Students apply the principles of scientific inquiry to solve problems related to biology, physics and chemistry in the context of highly-advanced industry applications of foods.

T57361 Introduction to Housing & Interior Design (5350)

Open to grades 9, 10, 11, 12

1 semester, 1 credit per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

Note: Fulfills a Fine Arts requirement

Introduction to Housing and Interior Design is a one semester hands-on course designed for students interested in exploring and learning about interiors and housing styles. Topics include housing decisions; planning of designed spaces through use of floor plans and construction documents; historical architectural styling and basic furniture styles; and the creation of safe, aesthetic spaces. Visual arts concepts including a study of color, elements of design, and material selections will be explored. A project based approach will provide the foundation to further advance studies in the areas of architecture, construction, housing, interior design, and furnishings industries.

T57701 Introduction to Fashion and Textiles (5380)

Open to grades 9, 10, 11, 12

1 semester, 1 credit per semester

Approximate cost per semester: TBD

Meets requirements of: THD, AHD, Core 40

This is an introductory course for students interested in a career in the fashion, textile, and apparel industry.

This course addresses knowledge and skills related to design; production; acquisition; and distribution in the fashion, textile, and apparel arena. It includes the study of personal, academic, and career success; careers in the fashion, textile, and apparel industry; factors influencing the merchandising and selection of fashion, textile, and apparel goods and their properties, design, and production; and consumer skills. A project-based approach integrates instruction and laboratory experiences including application of the elements and principles of design; selection, production, alteration, repair, and maintenance of apparel and textile products; product research, development, and testing; and application of technical tools and equipment utilized in the industry.

T57441 Child Development (5360)

Open to grades 9, 10, 11, 12

2 semesters, 1 credit per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

Semester one students experience an introductory course especially relevant for students interested in careers that draw on knowledge of children, child development, and nurturing of children. It includes the study of prenatal development and birth; growth and development of children; child care giving and nurturing; and support systems for parents and caregivers. Semester two includes the study of professional and ethical issues in child development; child growth and development; child development theories, research, and best practices; child health and wellness; special conditions affecting children; and career exploration in child development and nurturing. This is one of three (3) classes that may be taken as a group in lieu of Health & Safety. Students participate in an in-school lab gaining experience with young children through participation and observation. The emphasis is on parent and child activities.

T57102 Early Childhood Education I (2 hour) (5412)

T57103 Early Childhood Education I (3 hour) (5412)

Open to grades 11, 12

2 semesters, 2/3 credits per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

Prerequisite: Child Development

Dual Credit Available

Early Childhood Education I prepares students for employment in early childhood education and related careers that involve working with children from birth to eight-years old (3rd grade). It provides the foundation for further post-secondary study in early childhood

education and other child-related careers. Major course topics include: career paths in early childhood education; promoting child development and learning; building family and community relationships; observing, documenting, and assessing to support young children and families; using developmentally effective approaches; using content knowledge to build meaningful curriculum, and becoming an early childhood education professional. The course addresses planning and guiding developmentally appropriate activities for young children in various childcare settings; including guidance and discipline; and application of basic health, safety, and nutrition principles when working with children. Intensive experiences in one or more early childhood settings, resumes, and career portfolios are required components. High school students while under the supervision of the instructor will lead a preschool for children 3 – 4 years in age during the first semester of the class. Students will be placed in community early childhood centers during the second semester.

**T57112 Early Childhood Education II
(2 hour) (5406)**

**T57113 Early Childhood Education II
(3 hour) (5406)**

Open to grade 12

2 semesters, 2/3 credits per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

Required Prerequisite: Early Childhood Educ. I

Dual Credit Available

Early Childhood Education (ECE) II is a sequential course that builds on the foundational knowledge and skills of ECE I. In this course students further refine, and develop their knowledge and skills of children ages birth to eight-years old. The course standards parallel the expectations and documentation required for Child Development Associate (CDA) credentialing. Extensive experiences in one or more early childhood education settings are required: a minimum total of 480 hours must be accrued in ECE I and ECE II. These experiences may be either school-based or “on-the-job” in community-based early childhood education centers, or a combination of the two.

**T57122 Education Professions I
(2 hour) (5408)**

**T57123 Education Professions I
(3 hour) (5408)**

Open to grades 11, 12

2 semesters, 2/3 credits per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

**Recommendation(s): Child Development
Dual Credit Available**

This is an exciting hands-on exploration of learning and teaching that prepares students for employment in education and related careers and provides the foundation for study in higher education. An active learning approach incorporates communication, leadership and management skills into the study of education and related careers. The course of study includes, but is not limited to, the teaching profession, the learner and the learning process, planning instruction, learning environment, and instructional and assessment strategies. Exploratory field experiences in classroom settings and career portfolios are required components. A standards-based plan guides the students’ field experiences. Students are monitored in their field experiences by the Education Professions teacher. Students should be motivated toward exploring a career in education or related careers, have a good attendance record, and be willing to accept numerous responsibilities while interning in an elementary or middle school classroom. Students who enjoy working with children will love the activities and experiences in this class. Articulation with postsecondary programs is encouraged.

**T57132 Education Professions II
(2 hour) (5404)**

**T57133 Education Professions II
(3 hour) (5404)**

Open to grade 12

2 semesters, 2/3 credits per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

Prerequisite(s): Education Professions I

Dual Credit Available

For returning Teacher Education students, this course is a continuation of Education Professions I. The course prepares students for employment in education and related careers and provides the foundation for study in higher education in these career areas. An active learning approach incorporates communication, leadership, and management skills into the study of education and related careers. The course of study includes, but is not limited to, the teaching profession, the learner and the learning process, planning instruction, learning environment, and instructional and assessment strategies. Extensive field experiences in one or more classroom settings, resumes, and career portfolios are required components. Students are monitored in their field experiences by the Ed. Professions II teacher. Articulation with postsecondary programs is encouraged.

T57501 Introduction to Cosmetology (5239)**Open to grades 9, 10****2 semesters, 1 credit per semester****Approximate cost per semester: TBD****Meets requirements: THD, AHD, Core 40**

Introduction to Cosmetology will allow students to explore the basic fundamentals of hairstyling, nail care, skincare, salon safety, and salon business management through engaging hands-on activities, guest presentations, and live demonstrations. Students will develop a strong foundational knowledge about the varied career opportunities in the cosmetology industry. This is a great preparation course for anyone interested in learning more about hairstyling techniques or for those interested in pursuing the full C⁴ Cosmetology program, which can lead to an Indiana Cosmetology license.

T57504 Cosmetology I (5802)**Open to grades 11, 12****2 semesters, 4 credits per sem. at McDowell (3 periods) + Extra Clock Time until 5:30 p.m.****Monday through Friday****Approximate cost per semester: \$550****Meets requirements: THD, AHD, Core 40****Dual Credit Available**

Cosmetology I offers an introduction to cosmetology with emphasis on basic practical skills and theories including roller control, quick styling, shampooing, hair coloring, permanent waving, facials, manicuring, business and personal ethics, and bacteriology and sanitation. Second semester emphasis is placed on the application and development of these skills. State of Indiana requires a total of 1500 hours of instruction for licensure. This class is in session until 5:30 p.m.

T57514 Cosmetology II (5806)**Open to grade 12****2 semesters, 4 credits per sem. at McDowell (3 periods) + Extra Clock Time****Approximate cost per semester: \$25.00****Meets requirements: THD, AHD, Core 40****Prerequisite(s): Cosmetology I****Dual Credit Available**

Cosmetology II emphasis will cover the development of advanced skills in styling, hair coloring, permanent waving, facials, and manicuring. Students will also study anatomy and physiology, professionalism, and salon management in relation to cosmetology. This class is in session until 5:30 p.m.

T57210 Intro to Culinary Arts & Hospitality Management (5438)**Open to grades 9, 10, 11, 12****2 semesters, 1 credit per semester****Approximate cost per semester: TBD****Meets requirements: THD, AHD, Core 40**

This course is recommended for all students regardless of their career cluster or pathway in order to build basic culinary arts knowledge and skills. It is especially appropriate for students with an interest in careers related to Hospitality, Tourism, and Culinary Arts. A project-based approach that utilizes higher order thinking, communication, leadership, and management processes is recommended. Topics include basic culinary skills in the foodservice industry, safety and sanitation, nutrition, customer relations, and career investigation. Students explore this industry and examine their own career goals in light of their findings. Laboratory experiences that emphasize industry practices and develop basic skills are required components of this course.

T57212 Culinary Arts & Hospitality I (2 hr.) (5440)**T57213 Culinary Arts & Hospitality I (3 hr.) (5440)****Open to grades 10, 11, 12****2 semesters, 2/3 credits per semester****Approximate cost per semester: \$100****Meets requirements: THD, AHD, Core 40****Recommendation: Introduction to Culinary Arts & Hospitality**

This course prepares students for occupations and higher education programs of study related to the entire spectrum of careers in the hospitality industry. It prepares students to enter the Advanced Culinary Arts or Advanced Hospitality courses. Major topics include: introduction to the hospitality industry; food safety and personal hygiene; sanitation and safety; regulations, procedures, and emergencies; basic culinary skills; culinary math; food preparation techniques and applications; principles of purchasing, storage, preparation, and service of food and food products; application of sanitation and safety principles to maintain safe and healthy food service and hospitality environments; use and maintenance of related tools and equipment; and application of management principles. Intensive, teacher-facilitated laboratory experiences with commercial applications are required.

T57232 Culinary Arts & Hospitality II: Hospitality Management Arts (2 hr) (5458)**T57233 Culinary Arts & Hospitality II: Hospitality Management (3 hr) (5458)****Open to grades 11, 12****2 semesters, 2/3 credits per semester**

Approximate cost per semester: \$50.00

Meets requirements: THD, AHD, Core 40

**Prerequisite(s): Culinary Arts and Hospitality I:
Culinary Arts**

Advanced Hospitality Management prepares students for employment in the hospitality industry. It provides the foundations for study in higher education that leads to a full spectrum of hospitality careers. This is a broad-based course that introduces students to all segments of hospitality, what it includes, and career opportunities that are available; provides a survey of management functions, highlighting basic theories and facts; and exposes students to current trends and current events within the industry. Three major goals of this course are for students to be able to: identify current trends in hotel and restaurant management, distinguish between hospitality and tourism, and state differences in front of the house versus back of the house. Intensive experiences in one or more hospitality industry settings are a required component of the course.

**T57222 Culinary Arts & Hospitality II:
Culinary Arts (2 hr) (5346)**

**T57223 Culinary Arts & Hospitality II:
Culinary Arts (3 hr) (5346)**

Open to grades 11, 12

2 semesters, 2/3 credits per semester

Approximate cost per semester: \$100.00

Meets requirements: THD, AHD, Core 40

**Prerequisite(s): Culinary Arts and Hospitality I
Dual Credit Available**

Advanced Culinary Arts prepares students for occupations and higher education programs of study related to the entire spectrum of careers in the food industry, including (but not limited to) food production and services; food science, dietetics, and nutrition; and baking and pastry arts. Major topics for this advanced course include basic baking theory and skills, introduction to breads, introduction to pastry arts, nutrition, nutrition accommodations and adaptations, cost control and purchasing, and current marketing and trends. Intensive laboratory experiences with commercial applications are a required component of this course of study; including principles of nutrition, aesthetic, and sanitary selection; purchasing, storage, preparation, and service of food and food products; using and maintaining related tools and equipment; baking and pastry arts skills; managing operations in food service, food science, or hospitality establishments; providing for the dietary needs of persons with special requirements; and related research, development, and testing. Student lab experiences may be school-

based, "on-the-job" or a combination of the two.

PROTECTIVE SERVICES CLUSTER

T57012 Criminal Justice I (5822)

Open to grades 11, 12

2 semesters, 2 credits per semester

Approximate cost per semester: \$100

Meets requirements: THD, AHD, Core 40

**Recommendation(s): Digital App. & Responsibility,
Interpersonal Relationships**

Dual Credit Available

Criminal Justice I Introduces specialized classroom and practical experiences related to public safety occupations such as law enforcement, loss prevention services, and homeland security. This course provides an introduction to the purposes, functions, and history of the three primary parts of the criminal justice system as well as an introduction to the investigative process. Oral and written communication skills should be reinforced through activities that model public relations and crime prevention efforts as well as the preparation of police reports.

T57022 Criminal Justice II (5824)

Open to grade 12

2 semesters, 2 credits per semester

Approximate cost per semester: \$100

Meets requirements: THD, AHD, Core 40

Prerequisite(s): Criminal Justice I

Dual Credit Available

Criminal Justice II introduces students to concepts and practices in controlling traffic as well as forensic investigation at crime scenes. Students will have opportunities to use mathematical skills in crash reconstruction and analysis activities requiring measurements and performance of speed and acceleration calculations. Additional activities simulating criminal investigations will be used to teach scientific knowledge related to anatomy, biology, and chemistry as well as collection of evidence and search for witnesses, developing and questioning suspects, and protecting the integrity of physical evidence found at the scene and while in transit to a forensic science laboratory. Procedures for the use and control of informants, inquiries keyed to basic leads, and other information-gathering activity and chain of custody procedures will also be reviewed.

TRANSPORTATION CLUSTER

T55031 Introduction to Transportation (4798)

Open to grades 9, 10, 11, 12

2 semesters, 1 credits per semester

Approximate cost per semester: TBD

Meets requirements: THD, AHD, Core 40

This is an introductory course designed to help students become familiar with fundamental principles in modes of land, sea, air, and space transportation including basic mechanical skills and processes involved in transportation of people, cargo, and goods. Students gain and apply knowledge and skills in the safe application, design, production, and assessment of products, services, and systems as it relates to the transportation industries. Content of this course includes the study of how transportation impacts individuals, society, and the environment. This course allows students to reinforce, apply, and transfer their academic knowledge and skills to a variety of interesting and relevant transportation related activities, problems, and settings.

T58012 Automotive Services Technology I (5510)

Open to grades 10, 11, 12

2 semesters, 2 credits per semester

Approximate cost per semester: \$100

Meets requirements: THD, AHD, Core 40

Recommendation(s): Introduction to Transportation

Dual Credit Available

This is a one year course that encompasses the sub topics of the NATEF/ ASE identified areas of Steering & Suspension and Electrical Systems. This one-year course offering may be structured in a series of two topics per year offered in any combination of instructional strategies of semester based or yearlong instruction. Additional areas of manual transmissions and differentials, automatic transmissions, air conditioning, and engine repair should be covered as time permits. This one year offering must meet the NATEF program certifications for the two primary areas offered in this course. Mathematical skills will be reinforced through precision measuring activities and cost estimation and calculation activities. Scientific principles taught and reinforced in this course include the study of viscosity, friction, thermal expansion, and compound solutions. Written and oral skills will also be emphasized to help students communicate with customers, colleagues, and supervisors.

T58022 Automotive Services Technology II (5546)

Open to grades 11, 12

2 semesters, 2 credits per semester

Approximate cost per semester: \$100

Meets requirements of: THD, AHD, Core 40

Prerequisite: T58012 Automotive Services Technology I

Dual Credit Available

Automotive Services Technology II is a one year course that encompasses the sub topics of the NATEF/ASE identified areas of Electrical Systems and Engine Performance. This one year course offering may be structured in a series of two topics per year offered in any combination of instructional strategies of semester based or year long instruction. Additional areas of manual transmissions and differentials, automatic transmissions, air conditioning, and engine repair should be covered as time permits. This one year offering must meet the NATEF program certifications for the two primary areas offered in this course. Mathematical skills will be reinforced through precision measuring activities and cost estimation/calculation activities. Scientific principles taught and reinforced in this course include the study of viscosity, friction, thermal expansion, and compound solutions. Written and oral skills will also be emphasized to help students communicate with customers, colleagues, and supervisors.

T58032 Automotive Services Technology III (5546)

Open to grade 12

2 semesters, 2 credits per semester

Approximate cost per semester: \$100

Meets requirements: THD, AHD, Core 40

Prerequisite: Automotive Services Technology II

This program is designed for third year Automotive Technology students. Students must have met the program standards and maintained a grade of C or above in the first and second year of the Automotive Technology course sequence before they are eligible for advanced placement positions with community partner sites.

WORK-BASED LEARNING

C⁴ Work-Based Learning (WBL) Options

Components of the WBL system involve cooperative education, extended labs and advanced placements in partnership with community learning stations through C⁴ programming. Additional WBL opportunities

available to all students include job shadowing, internship and on-the-job training.

Advanced Job Placement (AJP): Advanced occupational training students may qualify for community placement training if they meet the criteria for eligibility. To qualify, the student must be a high school senior and the C⁴ instructor must agree that the student has shown the necessary technical skills to work in the community. The students must also be in good standing for graduation, have a good behavioral transcript, show no attendance issues, meet the standards for placement, and have passed the End-of-Program Assessment. Representatives from local industry will interview students prior to placement. Selected students are placed in on-the-job training sites under the supervision of a department manager. Student will work a minimum of 15 hours a week.

Co-op: The expectation for co-op students is that they will be placed into employment opportunities within the community for pay.

Extended Lab: Students in extended labs engage in community placement sometime after the first nine weeks. This experience is an extension of their classroom training; placement sites provide training and evaluation. Due to occupational training requirement, there is no pay for this experience.