

# **C<sup>4</sup> COLUMBUS AREA CAREER CONNECTION**

**2024-2025**

## **T1000 Preparing for College and Careers (5394)**

**Open to grade 9**

**1 semester, 1 credit per semester**

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

**Note: Required for high school graduation.**

**Qualifies for one of the F&CS waiver health credits.**

The focus of Preparing for College and Careers 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, exploration of personal aptitudes, examining multiple life roles and responsibilities as individuals and family members, building employment skills, management of personal and family financial resources, and computer and technology applications. This course includes review of the 16 national career clusters, in-depth investigation of one or more pathways, reviewing graduation plans, developing career plans, and developing personal career portfolios.

## **AGRICULTURAL SCIENCE CLUSTER**

### **T60111 Principles of Agriculture (7117)**

**Open to grades 9-12**

**2 semesters, 1 credit per semester**

**Meets requirements of: THD, AHD, Core 40**

**Dual Credit may be available**

This course prepares students who are interested in the study of Agriculture. Students will complete projects and learning activities that focus on real life situations in the study of animals, plants, soil, food, and horticultural sciences. There will also be activities studying agricultural business management, landscape management, natural resources and careers in agriculture, leadership, and supervised agricultural experience. An activity- and project-based approach is used along with team building to enhance the effectiveness of the student learning activities.

### **T60121 Animal Science (5008)**

**Open to grades 10-12**

**2 semesters, 1 credit per semester**

**Meets requirements of: THD, AHD, Core 40**

**Prerequisite(s): Principles of Agriculture**

**Note: Fulfills Core 40 Science Credit**

**Dual Credit may be available**

This course is a year-long program that provides students with an overview of the field of Animal Science. Students participate in a wide 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.

### **T60151 Horticultural Science (5132)**

**Open to grades 10-12**

**2 semesters, 1 credit per semester**

**Meets requirements of: THD, AHD, Core 40**

**Prerequisite(s): Principles of Agriculture****Note: Fulfills Core 40 Science Credit**

Horticultural Science is a two-semester course that provides students with a background in the field of horticulture. Coursework includes hands-on activities that introduce students to the following areas of horticulture science: reproduction and propagation of plants, plant growth, growth-media, management practices for field and greenhouse production, marketing concepts, production of plants of local interest, greenhouse management, floral design, and pest management. Students participate in a variety of activities including extensive laboratory work, usually in a school greenhouse.

**T60131 Advanced Life Science: Animals (5070)****Open to grades 10-12****2 semesters, 1 credit per semester****Meets requirements of: THD, AHD, Core 40****Prerequisite(s): Principles of Agriculture, Animal Science****Note: Qualifies as a Quantitative Reasoning Course****Note: Fulfills Core 40 Science Credit****Dual Credit may be available**

Advanced Life Science: Animals is a standards-based, interdisciplinary science course that integrates biology, chemistry, and microbiology in an agricultural context. Students enrolled in this course formulate, design, and carry out animal-based laboratory and field investigations as an essential course component. Students 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 completing this coursework will be able to apply the principles of scientific inquiry to solve problems related to biology and chemistry in highly advanced agricultural applications of animal development.

## **BUSINESS CLUSTER**

**T61111 Principles of Business Management (4562)****Open to grades 9-12****2 semesters, 1 credit per semester****Meets requirements of: THD, AHD, Core 40****Dual Credit may be available**

Principles of Business Management examines business ownership, organization principles and problems, management, control facilities, administration, financial management, and development practices of business enterprises. This course will also emphasize the identification and practice of the appropriate use of technology to communicate and solve business problems and aid in decision making. Attention will be given to developing business communication, problem-solving, and decision-making skills using spreadsheets, word processing, data management, and presentation software.

**61121 Accounting Fundamentals (4524)***(formerly Introduction to Accounting)***Open to grades 10-12****2 semesters, 1 credit per semester****Meets requirements of: THD, AHD, Core 40****Prerequisite(s): Principles of Business Management**

Accounting Fundamentals introduces the language of business using Generally Accepted Accounting Principles (GAAP) and procedures for proprietorships and partnerships using double-entry 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.

### **T61131 Advanced Accounting (4522)**

**Open to grades 10-12**

**2 semesters, 1 credit per semester**

**Prerequisite(s): Principles of Business Management, Accounting Fundamentals**

**Meets requirements of: THD, AHD, Core 40**

**Note: Qualifies as a Quantitative Reasoning course**

Advanced Accounting expands on the Generally Accepted Accounting Principles (GAAP) and procedures for various forms of business ownership using double-entry accounting covered in Accounting Fundamentals, including an emphasis on payroll accounting. Topics covered include calculating gross pay, withholdings, net pay, direct deposits, journalizing payroll transactions, and preparing individual earnings records and payroll registers. Emphasis is placed on applying Generally Accepted Accounting Principles through hands-on practice with popular commercial accounting software packages that are currently used in business.

### **T61221 Management Fundamentals (7143)**

**Open to grades 10-12**

**2 semesters, 1 credit per semester**

**Meets requirements of: THD, AHD, Core 40**

**Prerequisite: Principles of Business Management**

**Dual Credit may be available**

Management Fundamentals describes the functions of managers, including the management of activities and personnel, describes the judicial system and the nature and sources of law affecting business, studies contracts, sales contracts with emphasis on Uniform Commercial Code Applications, remedies for breach of contract and tort liabilities, and examines legal aspects of property ownership, structures of business ownership, and agency relationships.

### **T61331 Finance & Investment (5258)**

**Open to grades 10-12**

**2 semesters, 1 credit per semester**

**Meets requirements of: THD, AHD, Core 40**

**Prerequisite(s): Principles of Business Management, Accounting Fundamentals**

Finance and Investment 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, investments and securities, risk management products, and corporate finance.

### **T51101 Personal Financial Responsibility (4540)**

**Open to grades 10-12**

**1 semester, 1 credit per semester**

**Meets requirements of: THD, AHD, Core 40**

**Note: Qualifies as a Quantitative Reasoning Course**

Personal Financial Responsibility addresses the identification and management of personal financial resources to meet the financial needs and wants of individuals and families, considering a broad range of economic, social, cultural, technological, environmental, and maintenance factors. This course helps students build skills in financial responsibility and decision making; analyze personal standards, needs, wants, and goals, identify sources of income, savings, and investing; understand banking, budgeting, record-keeping and managing risk, insurance, and credit card debt. A project-based approach and applications through authentic settings such as work-based observations and service learning experiences are appropriate. Direct, concrete applications of mathematics proficiencies in projects are encouraged.

## **T51141 Marketing Fundamentals (5914)**

**Open to grades 10-12**

**2 semesters, 1 credit per semester**

**Meets requirements of: THD, AHD, Core 40**

**Dual Credit may be available**

**Prerequisite: Principles of Business Management**

Marketing Fundamentals provides a basic introduction to the scope and importance of marketing in the global economy. Course topics include the seven functions of marketing: promotion, channel management, pricing, product/service management, market planning, marketing information management, and professional selling skills. Emphasis is marketing content but will involve use of oral and written communications, mathematical applications, problem-solving, and critical thinking skills through the development of an integrated marketing plan and other projects.

## **T51131 Sports & Entertainment Marketing (5984)**

**Open to grades 11-12**

**2 semesters, 1 credit per semester**

**Meets requirements of: THD, AHD, Core 40**

Sports and Entertainment Marketing is a specialized marketing course that develops student understanding of the sport/event industries, their economic impact, and products, distribution systems and strategies, pricing considerations, product/service management, and promotion. Students acquire an understanding and appreciation for planning. Throughout the course, students are presented problem-solving situations for which they must apply academic and critical-thinking skills. Participation in cooperative education is an optional instructional method, giving students the opportunity to apply newly acquired marketing skills in the workplace.

## **T51081 Business Law & Ethics (4560)**

**Open to grades 11-12**

**1 semester, 1 credit**

**Meets requirements of: THD, AHD, Core 40**

**Dual Credit may be available**

Business Law and Ethics provides an overview of the legal system in the business setting. Topics covered include: basics of the judicial system, contract, personal, employment, and property law. Application of legal principles and ethical decision-making techniques are presented through problem-solving methods, case review, and situational analyses.

# **COMMUNICATIONS CLUSTER**

## **T52111 Design Fundamentals (4834)**

**Open to grades 9-12**

**2 semesters, 1 credit per semester**

**Meets requirements of: THD, AHD, Core 40**

**Note: Fulfills a FA credit**

**Dual Credit may be available**

Design Fundamentals 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. Student experiences will encompass aspects of art in communication, integration of art in communication, and incorporate literacy and presentation skills.

## **T62321 & T62311 Graphic Design I & Principles (7141 & 7140)**

**Must take both concurrently**

## **Open to grades 10-12**

**2 semesters, 2 credits per semester**

**Meets requirements of: THD, AHD, Core 40**

**Recommendation(s): Design Fundamentals**

**Dual Credit may be available**

In Graphic Design I more emphasis will be placed on color and full color process printing. Larger sized projects to fit the larger offset presses will also be included. This course 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.

## **T6233I & T6234I Graphic Design II & Capstone (5550 & 7246)**

**Must take both concurrently**

**Open to grades 11-12**

**2 semesters, 2 credits per semester**

**Meets requirements of: THD, AHD, Core 40**

**Prerequisite(s): Graphic Design I & Principles**

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

## **T6240I Introduction to Animation (4790)**

**Open to grades 9-12**

**2 semesters, 1 credit per semester**

**Meets requirements of: THD, AHD, Core 40**

Introduction to Animation is a course designed to provide a foundational knowledge of the process behind 3D modeling and animation. This course explores the application of the tools, materials, and techniques used to design, produce, use, and evaluate animations. Students will produce traditional and digital media as they apply the principles of animation and design that they will learn in this course. This course will also explore the history of animation and its applications over the past several years. Major goals of this course include building foundational skills in 3D software, learning the workflow for creating 3D models and animation, and learning different ways to apply these tools and concepts to their creative work. Students will have the opportunity to learn industry-standard software including the Adobe Creative Suite, Blender, Substance 3D Painter, and more. Students will utilize the principles of animation and a foundational understanding in 3D software in their creative projects.

## **T6242I & T6241I 3-D Animation I & Principles (714I & 7140)**

**Must take both concurrently**

**Open to grades 10-12**

**2 semesters, 2 credits per semester**

**Meets requirements of: THD, AHD, Core 40**

**Recommendation(s): Introduction to Animation**

**Dual Credit may be available**

3D Animation I introduces and explores three-dimensional animation techniques as used by the animation and graphics industry today. This course applies the use of various 3D and 2D graphics software in order to create digital images and videos. Course assignments stress the use of modern animation pipeline techniques including but

not limited to 3D modeling, materials and texturing, lighting, rendering, keyframe animation, and visual effects. Students will be responsible for the design, development, and production of graphics and video based digital animation products.

## **T6243I & T6244I 3D Animation II & Capstone (7138 & 7246)**

***Must take both concurrently***

**Open to grades 11-12**

**2 semesters, 2 credits per semester**

**Meets requirements of: THD, AHD, Core 40**

**Prerequisite(s): 3D Animation I & Principles**

**Recommendation(s): Introduction to Animation**

**Dual Credit may be available**

3D Animation II builds on the foundational skills developed in the 3D Animation I course. Students will learn more advanced techniques for 3D modeling, texturing and material generation, animation, lighting, rendering, and video production. This course will also cover more advanced techniques in 3D graphics including character creation, rigging, character animation, physics simulations, and visual effects. Students will be responsible for the design, development, and production of high-quality graphics and video based digital animation products.

## **T62102 Introduction to Radio & Television (4790)**

**Open to grades 9-12**

**\*meets at East**

**2 semesters, 1 credit hour per semester**

**Meets requirements of THD, AHD, Core 40**

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 included. Radio instruction consists of training on industry standard software (WireReady), scripting for radio, interviewing, and an introduction to podcasting.

## **T6212I & T6211I Radio & Television I & Principles: East (7306 & 7139)**

***Must take both concurrently***

**Open to grades 10-12**

**2 semesters, 2 credits per semester**

**Meets requirements of: THD, AHD, Core 40**

**Recommendation(s): Introduction to Radio & Television**

**Dual Credit may be available**

Radio and Television I provides instruction to develop competencies in various communication, marketing, media, production and technical functions and tasks performed by employees, including management personnel in TV broadcasting and telecommunications occupations. Instructional strategies include hands-on activities where students create commercials, TV broadcasts, sportscasts, new programs, and other production related projects.

## **T6213I & T6214I Radio and Television II & Capstone: East (7307 & 7308)**

***Must take both concurrently***

**Open to grades 11-12**

**2 semesters, 2 credits per semester**

**Meets requirements of: THD, AHD, Core 40**

**Prerequisite(s): Radio and Television I & Principles**

**Dual Credit may be available**

This course continues to develop and enhance storytelling competencies utilizing both media formats - radio and television. Emphasis is placed on scripting, on-air delivery, television producing, advanced editing, writing, and TV directing. Event coverage, news reporting, and full production projects are required in both media. Radio projects include the development, scheduling, production, and formatting of school announcements and podcasts. Note: Student crew members will often be required to cover events outside of the school day.

**T6222I & T6221I Radio and Television I: BNN & Principles North (7306 & 7139)**

**Must take both concurrently**

**Open to grades 10 - 12**

**2 semesters, 2 credits per semester**

**Meets requirements: THD, AHD, Core 40**

**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 provides instruction to develop and competencies in various communication, marketing, media, production and technical functions and tasks performed by employees, including management personnel in TV broadcasting and telecommunications occupations. Instructional strategies include hands-on activities where students create commercials, TV broadcasts, sportscasts, new programs and other production related projects.

**T6223I & T6224I Radio and Television II: BNN & Capstone North (7307 & 7308)**

**Must take both concurrently**

**Open to grades 11 - 12**

**2 semesters, 2 credits per semester**

**Meets requirements: THD, AHD, Core 40**

**Prerequisite(s): BNN I & Principles**

**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 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 Creative Suite), 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.

## **COMPUTER TECHNOLOGY CLUSTER**

**T6311I Principles of Computer Science (7183)**

**Open to grades 9-12**

**2 semesters, 1 credit per semester**

**Meets requirements of: THD, AHD, Core 40**

**Note: Qualifies for Quantitative Reasoning**

**Note: Fulfills Core 40 Science Credit**

**Dual Credits may be available**

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, and system flowcharts for business problems, input/output techniques, looping, modules, selection structures, and file handling. Students have an opportunity to apply skills in a laboratory/hands-on environment.

## **T6322I Information Technology Fundamentals (7180)**

**Open to grades 10-12**

**2 semesters, 1 credit per semester**

**Meets requirements of: THD, AHD, Core 40**

**Prerequisite(s): Principles of Computer Science**

**Dual Credits may be available**

Information Technology Fundamentals 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 should earn an industry-based certification at the end of the course.

## **T6323I Networking & Cybersecurity Operations (7181)**

**Open to Grades 10-12**

**2 Semesters, 1 Credit per Semester**

**Meet Requirements of THD, ADH, Core 40**

**Prerequisite(s) Principles of Computer Science & Information Technology Fundamentals**

Networking Fundamentals describes, explores and demonstrates how a network operates in our everyday lives. The course covers the technical pieces and parts of a network and also societal implications such as security and data integrity. Using hands-on lab work, this course offers students the critical information needed for a role as an Information Technology professional who supports computer networks. Concepts covered include the TCP/IP model, OS administration, designing a network topology, configuring the TCP/IP protocols, managing network devices and clients, configuring routers and switches, wireless technology and troubleshooting. Students are provided the knowledge of how to implement, administer, and troubleshoot information systems that incorporate the Microsoft Windows clients and servers in an enterprise environment. Students will be introduced to managing applications, files, folders, and devices in a windows active directory environment.

## **T6312I Cybersecurity Fundamentals (7179)**

**Open to grades 10-12**

**2 semesters, 1 credit hour per semester**

**Meets requirements of: THD, AHD, Core 40**

**Prerequisite(s): Principles of Computer Science**

**Note: Qualifies for Quantitative Reasoning**

**Note: Fulfills Core 40 Science Credit**

In this course, students learn and practice skills necessary to perform in 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.

## **T6313I Advanced Cybersecurity (7178)**

**Open to Grades 10-12**



**2 Semesters, 1 Credit per semester**

**Meet Requirements of THD, AHD Core 40**

**Prerequisite(s) Principles of Computer Science & Cybersecurity Fundamentals**

Students will acquire the fundamentals of information and data security and understand the vulnerability most organizations have in their security systems with an emphasis on firewalls, security plans, and Virtual Private Networks (VPNs). Discussions will include data security methods, authentication, network attacks, malicious code and viruses, wireless security, email and web security, and disaster recovery. This course will also focus on the managerial aspects of information security and assurance. Topics covered include access control models, information security governance, and information security program assessment and metrics. Coverage on the foundational and technical components of information security is included to reinforce key concepts, such as security planning and contingencies, security policies, security management models, and practices and ethics.

## **CONSTRUCTION TECHNOLOGY CLUSTER**

### **T5400I Introduction to Architecture (5640)**

**Open to grades 9-12**

**2 semesters, 1 credit per semester**

**Meets requirements: THD, AHD, Core 40**

**Dual Credit may be available**

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.

### **T6412I & T6411I Architectural Drafting and Design I & Principles (7196 & 4802)**

**Must take both concurrently**

**Open to grades 10-12**

**2 semesters, 2 credits per semester**

**Meets requirements of: THD, AHD, Core 40**

**Recommendation(s): Introduction to Architecture**

**Note: Intro to Engineering Design (IED) credit embedded**

**Dual Credit may be available**

Architectural Drafting and Design I will provide 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 (multi-view) 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 will include print reading and drawing. Another purpose of this introductory 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 will gain valuable hands-on experience with AutoCAD. They will be expected to complete several projects relating to command topics. Topics include: 2D drawing commands, coordinate systems, editing commands, paper and model space, inquiry commands, layers, plotting, text, and basic dimensioning. This course will also include Basic Architectural AutoCAD practices.

### **T6413I & T6414I Architectural Drafting and Design II & Capstone (7197 & 7225)**

**Must take both concurrently**

**Open to grades 11-12**

**2 semesters, 2 credits per semester**

**Meets requirements of: THD, AHD, Core 40**

**Prerequisite(s): Architectural Drafting and Design I & Principles**

**Note: Qualifies as a Quantitative Reasoning course.**

**Dual Credit may be available**

Architectural Drafting and Design II 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; and 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. This course will focus on advanced CAD features, including fundamentals of three-dimensional modeling for design and includes overview of modeling, graphical manipulation, part structuring, coordinate system, and developing strategy of modeling. Advanced CAD will enable the student to make the transition from 2D drafting to 3D modeling. Various Architectural software packages and applications may be used.

## **T54111 Introduction to Construction (4792)**

**Open to grades 9-12**

**2 semesters, 1 credit per semester**

**Meets requirements of: THD, AHD, Core 40**

Introduction to Construction is a course that will offer hands-on activities and real world experiences related to the skills essential in residential, commercial, and civil building construction. During the course students will be introduced to the history and traditions of construction trades. The student will 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, dry walling, HVAC, and painting as developed locally in accordance with available space and technologies. Students learn how architectural ideas are converted into projects and how projects are managed during a construction project in this course. Students study construction technology topics such as preparing a site, doing earthwork, setting footings and foundations, building the superstructure, enclosing the structure, installing systems, finishing the structure, and completing the site. Students also investigate topics related to the purchasing and maintenance of structures, special purpose facilities, green construction, and construction careers.

## **T64221 & T64211 Construction Trades I & Principles (7123 & 7130)**

**Must take both concurrently**

**Open to grades 10-12**

**2 semesters, 2 credits per semester**

**Meets requirements of: THD, AHD, Core 40**

**Recommendation(s): Introduction to Construction**

**Dual Credit may be available**

Construction Trades I 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 will 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 examine the design and construction of floor and wall systems and develop the skills needed for layout and construction processes of floor and wall systems from blueprints and professional planning documents. Instruction will be given in the following areas: administrative requirements, definitions, building planning, foundations, wall coverings, roof and ceiling construction, and roof assemblies. 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.

## **T6423I & T6424I Construction Trades II & Capstone (7122 & 7242)**

**Must take both concurrently**

**Open to grades 11-12**

**2 semesters, 2 credits per semester**

**Meets requirements of: THD, AHD, Core 40**

**Prerequisite(s): Construction Trades I & Principles**

**Dual Credit may be 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. This course provides training in installation of drywall, moldings, interior doors, kitchen cabinets, and baseboard moldings. Students will also develop skills in the finishing of building exteriors. They will 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.

## **ENGINEERING & MANUFACTURING**

### **T6510I Introduction to Industry (4800)**

**Open to grades 9-12**

**2 semesters, 1 credit per semester**

**Meets requirements of: THD, AHD, Core 40**

Introduction to Industry is a course that 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 in electronics, manufacturing, precision machining, welding, and architecture. The content and activities should be developed locally in accordance with available advanced technologies in the school. Course content addresses 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 creation and editing of graphics and audio files; control technologies; and automation in the modern workplace.

### **T6521I Introduction to Engineering Design (4802)**

**Open to grades 9-12**

**2 semesters, 1 credit per semester**

**Meets requirements of: AHD, THD, CORE 40**

**Recommendation(s): Algebra**

**Dual Credit may be 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 and Computer Aided Design (CAD).

### **T6522I Principles of Engineering (5644)**

**Open to grades 10-12**

**2 semesters, 1 credit per semester**

**Meets requirements of: AHD, THD, CORE 40**

**Prerequisite(s): Introduction to Engineering Design**

**Recommendation(s): Algebra I and Geometry**

**Dual Credit may be available**

**Note: Qualifies as a Quantitative Reasoning course.**

**Note: Fulfills Core 40 Science Credit.**

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.

## **T6525 I Civil Engineering & Architecture (5650)**

**Open to grades 11-12**

**2 semesters, 1 credit per semester**

**Meets requirements of: AHD, THD, CORE 40**

**Recommendation(s): Algebra I, Geometry**

**Prerequisite(s): Introduction to Engineering Design and Principles of Engineering**

Civil Engineering and Architecture introduces students to the fundamental design and development aspects of civil engineering and architectural planning activities. Application and design principles will be used in conjunction with mathematical and scientific knowledge. Computer software programs allow students opportunities to design, simulate, and evaluate the construction of buildings and communities. During the planning and design phases, instructional emphasis is placed on related transportation, water resources, and environmental issues. Activities include the preparation of cost estimates as well as a review of regulatory procedures that would affect the project design.

## **T6523 I Computer Integrated Manufacturing (5534)**

**Open to grades 11-12**

**2 semesters, 1 credit per semester**

**Meets requirements of: AHD, THD, CORE 40**

**Recommendation(s): Algebra I, Geometry**

**Prerequisite(s): Introduction to Engineering Design and Principles of Engineering**

**Note: Qualifies as a Quantitative Reasoning course.**

This course applies principles of rapid prototyping, robotics, and automation. This course builds upon the computer solid modeling skills developed in Introduction to 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.

## **T6532 I & T6531 I Automation & Robotics I & Principles (7103 & 7108)**

***Must take both concurrently***

**Open to grades 10-12**

**2 semesters, 2 credit per semester**

**Meets requirements of: THD, AHD, Core 40**

**Recommendation(s): Introduction to Industry: Engineering & Manufacturing,  
Introduction to Engineering Design**

**Dual Credit may be available**

Industrial Automation and Robotics I introduces students to a curriculum covering the multi-craft skills needed by Industrial technicians to complete the complex and varied tasks for the career. Students will gain skills to design and build basic robots that use sensors and actuators to solve specific problems and complete specific tasks. This will include introductory programming autonomous mode. Students will also learn to program a humanoid robot, tethered and in autonomous mode, able to react to specific circumstances and perform human-like tasks when programming is complete. This course will provide fundamental knowledge and skills in basic lasers, pneumatics, hydraulics, mechanics, basic electronics and programmable logic controllers along with an understanding of career pathways in this sector. The Year One curriculum will include General Industry: OSHA 10 safety certification.

**T6533 I & T6534 I Automation & Robotics II & Capstone (7106 & 7224)**

***Must take both concurrently***

**Open to grades 11-12**

**2 semesters, 2 credit per semester**

**Meets requirements of: THD, AHD, Core 40**

**Prerequisite(s): Automation and Robotics I & Principles**

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

**Note: Qualifies as a Quantitative Reasoning course.**

**Dual Credit may be available**

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 languages that are common in local 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 plans in this sector.

**T6542 I & T6541 I Precision Machining I & Principles (7105 & 7109)**

***Must take both concurrently***

**Open to grades 10-12**

**2 semesters, 2 credits per semester**

**Meets requirements of: THD, AHD, Core 40**

**Recommendation(s): Introduction to Industry: Engineering & Manufacturing**

**Note: Qualifies as a Quantitative Reasoning course.**

**Dual Credit may be available**

Precision Machining I is designed to provide 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 have an introduction to CNC (computer controlled) machines.

**T6543 I & T6544 I Precision Machining II & Capstone (7107 & 7219)**

***Must take both concurrently***

**Open to grades 11-12**

**2 semesters, 2 credits per semester**

**Meets requirements of: THD, AHD, Core 40**

**Prerequisites: Precision Machining I & Principles**

**Note: Qualifies as a Quantitative Reasoning course.**

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

## **T6552I & T6551I Welding I & Principles (7111 & 7110)**

***Must take both concurrently***

**Open to grades 10-12**

**2 semesters, 2 credits per semester**

**Meets requirements of: THD, AHD, Core 40**

**Recommendation(s): Introduction to Industry**

**Dual Credit may be available**

Welding I 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.

## **T6553I & T6554I Welding II & Capstone (7101 & 7226)**

***Must take both concurrently***

**Open to grades 11-12**

**2 semesters, 2 credits per semester**

**Meets requirements of: THD, AHD, Core 40**

**Prerequisite(s): Welding I & Principles**

**Dual Credit may be available**

Welding Technology II builds on the Gas Metal Arc Welding, Flux Cored Arc Welding, Gas Tungsten Arc Welding, 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.

## **T5511I Mechanical Drafting CAD/CAM (4836)**

**Open to grades 10-12**

**2 semesters, 1 credit hour per semester**

**Recommendation(s): Intro to Engineering Design, or Precision Machining II, or Computer Integrated Manufacturing, or Introduction to Industry: Engineering & Manufacturing**

**Dual Credit may be available**

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.

# **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.

***\*In order to earn a Technical Honors Diploma in PLTW Biomedical Sciences, students must also take Medical Terminology and earn Dual Credit.***

### **T66111 PLTW: Principles of Biomedical Science (5218)**

**Open to grades 9-12**

**2 semesters, 1 credit per semester**

**Meets requirements of: AHD, THD, CORE 40**

**Recommendation: Enrolled in Biology**

**Note: Fulfills Core 40 Science Credit**

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.

### **T66121 PLTW: Human Body Systems (5216)**

**Open to grades 10-12**

**2 semesters, 1 credit per semester**

**Meets requirements of: AHD, THD, CORE 40**

**Prerequisite(s): Principles of Biomedical Sciences**

**Note: Fulfills Core 40 Science Credit**

Students will 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 to 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 data acquisition software usage to monitor body functions such as reflex, muscle movement and lung capacities. Students will learn to assess and monitor the body systems and how they work together.

### **T66131 PLTW: Medical Interventions (5217)**

**Open to grades 11-12**

**2 semesters, 1 credit per semester**

**Meets requirements of: AHD, THD, CORE 40**

**Prerequisite(s): Principles of Biomedical Sciences, Human Body Systems**

**Note: Fulfills Core 40 Science Credit**

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.

## **T66141 PLTW: Biomedical Innovation (5219)**

**Open to grades 12**

**2 semesters, 1 credit per semester**

**Meets requirements of: AHD, THD, CORE 40**

**Prerequisite(s): Principles of Biomedical Sciences, Human Body Systems, Medical Interventions**

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. They will investigate public health issues and forensic autopsy. They may work with a mentor or advisor from a university, hospital, physician's office, or industry as they complete class projects.

## **T66101 Medical Terminology (5274)**

**Open to grades 10- 12**

**2 semesters, 1 credit per semester**

**Meets requirements of: AHD, THD, CORE 40**

**Note: Same credit embedded in Health Science Education I: Nursing**

**Dual Credit may be available**

Learn a new language in this two-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 health career.

## **DENTAL**

***\*In order to earn a Technical Honors Diploma in Dental, students must also take Medical Terminology and earn Dual Credit.***

## **T66321 & T66311 Dental Careers I & Principles (7316 & 7315)**

***Must take both concurrently***

**Open to grades 10-12**

**2 semesters, 2 credit hours per semester**

**Meets requirements of: THD, AHD, Core 40**

**Recommendation(s): Principles of Biomedical Sciences or Human Body Systems**

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, chair-side procedures, dental materials, placing restorations, equipment/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 to 8 hour dental office observation during this course.

## **T66331 & T66341 Dental Careers II & Capstone (7317 & 7318)**

***Must take both concurrently***

**Open to grades 11-12**

**2 semesters, 2 credit hours per semester**

**Meets requirements of: THD, AHD, Core 40**



**Prerequisite(s): Dental Careers I & Principles**

This course provides the student with more extensive training as a Dental Professional. There is an excellent opportunity for employment experience toward college technical training. The student will perform more complex procedures during Dental Careers II in the simulated in-school laboratory such as placing restorations, orthodontic, endodontic, radiography, surgical, prosthodontic, and periodontal specialty skills and procedures. Students may be eligible to participate in an off-campus externship experience in a local dental office during the second semester.

## **NURSING**

**T6622I & T6621I Health Science Education I: Nursing & Principles (5275 & 7168)**

***Must take both concurrently***

**Open to grades 10-12**

**2 semesters, 2 credits per semester**

**Meets requirements of: THD, AHD, Core 40**

**Recommendation(s): PLTW Principles of Biomedical Sciences and/or PLTW Human Body Systems**

**Note: Embedded Medical Terms credit**

**Dual Credit may be available**

This course is the first year of a two-year pathway in Health Sciences. Students will be exposed to multiple healthcare careers which will allow them to develop skills to prepare for the medical field. Students are provided opportunities to learn and participate in clinical activities such as medical terminology, anatomy, physiology, pathophysiology, and diagnostics and treatment. Students will also participate in non-clinical activities such as generating patient records, medical law and ethics, customer service, health insurance, and other fundamental administrative tasks. The course integrates learning hands-on patient care techniques (pulse, blood pressure, hygiene, patient movement, nutrition/elimination) in our updated simulation lab, providing an opportunity to build empathy and learn advocacy for future patients. Students will also receive certification in CPR/AED for the Professional Rescuer. This course equips students with essential knowledge and skills for the real world, laying a strong foundation for a successful career within the medical field.

**T6623I & T6624I Health Science Education II: Nursing & Capstone (7164 & 7255)**

***Must take both concurrently***

**Open to grades 11, 12**

**2 semesters, 2 credits per semester**

**Meets requirements of: THD, AHD, Core 40**

**Prerequisite(s): Health Science Education I: Nursing & Principles**

This course offers an overview of human anatomy, physiology, disease process, and treatment with an emphasis on healthcare employability skills, teamwork, and communication. Through a combination of course work and clinical simulation closely related to many areas of interest, the course will prepare students for the National Healthcare Association Certified Clinical Medical Assistant exam while also providing the foundation for advanced employment and/or post-secondary education in various health career fields. A certification in Clinical Medical Assisting can be enhanced with additional stackable certifications such as telemetry, phlebotomy, and health information management/ medical records. Instruction includes taking and recording vital signs, preparing patients for examination, patient education, and assisting the physician during the exam. The collecting and preparation of laboratory specimens and basic laboratory tests will be covered. Prepares for the administration of medication, venipuncture, ECG, and wound care. Provides a basic understanding of the clinical and administrative duties and responsibilities pertinent to medical offices. Includes instruction in medical correspondence and records, case histories of patients, filing, telephone procedures, appointment scheduling, receptionist duties, and processing mail. Written, verbal and nonverbal communications according to patient needs are covered as well as documentation and associated legal and ethical boundaries.

## VETERINARY

***\*In order to earn a Technical Honors Diploma in Veterinary Careers, students must earn dual credit in Animal Science.***

### **T6642I & T6641I Veterinary Careers I & Principles (728I & 7280)**

***Must take both concurrently***

**Open to grades 10-12**

**2 semesters, 2 credits per semester**

**Meets requirements of: THD, AHD, Core 40**

**Recommendation(s): Animal Science, Advanced Life Science: Animals, PLTW Principles of Biomedical Sciences, PLTW Human Body Systems, Medical Terminology**

This course provides entry level training as a Veterinary Assistant for students pursuing careers as Veterinarians, Veterinary Technicians, Veterinary Assistants, 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 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.

### **T6643I & T6644I Veterinary Careers II & Capstone (5070 & 7282)**

***Must take both concurrently***

**Open to grades 11-12**

**2 semesters, 2 credits per semester**

**Prerequisite(s): Veterinary Careers I & Principles**

**Meets requirements of: THD, AHD, Core 40**

**Dual Credit may be available**

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. Clinical placement begins early in the school year and continues until the end of the year. Health Careers Training - Veterinary Assisting Year Two offers a wonderful 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.

## HUMAN SERVICES CLUSTER

### **T5732I Interpersonal Relationships (5364)**

**Open to grades 9-12**

**1 semester, 1 credit per semester**

**Meets requirements of: AHD, THD, CORE 40**

**Qualifies for one of the F&CS waiver health credits.**

This course provides the knowledge and skills needed for positive and productive relationships in career, community, and family settings. Designed for teens who 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.

### **T5735I Adult Roles and Responsibilities (5330)**

**Open to grades 10-12**

**1 semester, 1 credit per semester**

**Meets requirements of: AHD, THD, CORE 40**

**Qualifies for one of the F&CS waiver health credits.**

Adult Roles and Responsibilities is recommended for all students 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 will develop skills to build more meaningful, lasting relationships. They will explore many of the issues that challenge the individual family in today's society. Students will complete projects and class activities that involve consumer decision-making about housing, clothing, nutrition and wellness, transportation, and family financial management.

## **T5736I Introduction to Housing and Interior Design (5350)**

**Open to grades 9-12**

**1 semester, 1 credit**

**Meets requirements of: AHD, THD, CORE 40**

**Fulfills a Fine Arts credit for AHD**

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 choosing a place to live, study of color, elements of design, furniture arrangement, floor plans, choosing backgrounds (walls, floors, windows), decorating, and housing careers. This course is filled with many design and craft type projects. This class may be taken as a fine art credit.

## **T5770I Introduction to Fashion and Textiles (5380)**

**Open to grades 9-12**

**1 semester, 1 credit**

**Meets requirements of: AHD, THD, CORE 40**

**Fulfills a Fine Arts credit for AHD**

Embark on a dynamic exploration of the fashion, textile, and apparel industry with this one-semester course, Introduction to Fashion and Textiles. Tailored for students interested in academic enrichment or aspiring to careers in the field, this course delves into essential knowledge and skills for success in design, production, acquisition, and distribution within the industry. The project-based approach integrates classroom instruction with hands-on laboratory experiences, adding a practical dimension to the learning experience. Explore the creative side with exciting sewing projects that may include crafting a personalized pillowcase, designing a stylish zipper pouch, and creating comfortable pajama pants. These projects not only enhance practical skills but also reinforce the connection between theoretical knowledge and real-world application. Join Introduction to Fashion and Textiles for a hands-on journey that brings fashion to life!

## **T6772I & T6771I Fashion and Textiles I & Principles (7302 & 7301)**

***Must take both concurrently***

**Open to grades 10-12**

**2 semesters, 2 credit per semester**

**Meets requirements of: AHD, THD, CORE 40**

**Recommendation(s): Introduction to Fashion & Textiles**

This foundational course prepares students for the diverse spectrum of fashion industry careers and higher education programs. Dive into hands-on learning, mastering basic clothing construction techniques, pattern alterations, and the use of commercial patterns, laying the groundwork for creative expression in the fashion creation process. Beyond the stitches and patterns, explore the textiles, apparel, and merchandising industry specific to fashion. Uncover the essence of fashion, from raw materials to production, while gaining insights into the roles of designers, retailers, and supporting services that shape the industry. Fashion and Textiles I is more than a course; it's a voyage of self-discovery within the dynamic world of style. Whether envisioning a career as a designer, merchandiser, or industry expert, this course provides the essential skills and knowledge to kickstart

a fashion journey. Unravel the threads of creativity, technique, and industry insights, crafting the foundation for an exciting future in the ever-evolving world of fashion.

## **T6773 I & T6774 I Fashion and Textiles II & Capstone (7303 & 7304)**

**Open to grades 11-12**

**2 semesters, 2 credit per semester**

**Prerequisite(s): Fashion and Textiles I & Principles**

**Meets requirements of: AHD, THD, CORE 40**

Fashion and Textiles II: This course invites all on a captivating journey into the intricate world of textiles, from fibers and yarns to fabric construction and finishes. Discovering the evolution of Western dress, traverse through ancient times to the chic styles of the twentieth century, emphasizing representative styles and the dynamic changes in fashion over time. The course takes a hands-on approach, diving into the details that define apparel quality. Uncover the physical features influencing the look and feel of one's favorite outfits, understanding how stitching and textiles impact both aesthetics and functionality. But that's not the only adventure. Become a fashion detective, analyzing ready-to-wear apparel, decoding the features that make them not only trendy but also comfortable and functional. It's a journey into the science behind style. Fashion and Textiles II is more than a class; it's an exploration of threads, textures, and trends. Whether fashion enthusiast, textile aficionado, or simply love self-expression through clothing, this course offers a backstage pass to the captivating world of style. Join in, unraveling the history, art, and details that make fashion a unique form of self-expression. It's time to thread through the fascinating tapestry of style!

## **T5739 I Adv Sports Nutrition and Wellness (5340)**

**Open to grades 9-12**

**2 semesters, 1 credit per semester**

**Meets requirements of: AHD, THD, CORE 40**

Sports Nutrition and Wellness is a course which provides an extensive study of nutrition. Sports Nutrition and Wellness is an especially appropriate course for students interested in careers in the medical field, athletic training, and dietetics. This course 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/drinks.

## **T6761 I Advanced Life Science: Foods (5072)**

**Open to grades 10-12**

**Prerequisite for Ag Pathway: Principles of Ag and Animal Science**

**2 semesters, 1 credit per semester**

**Meets requirements of: AHD, THD, CORE 40**

**Note: Fulfills Core 40 Science Credit**

Advanced Life Science: Foods is a standards-based, interdisciplinary science course that integrates biology, chemistry, and microbiology in an agricultural context. Students enrolled in this course formulate, design, and carry out food-based laboratory and field investigations as an essential course component. Students investigate key concepts that enable them to understand how biology, chemistry, and physics principles apply to the composition of foods, food nutrition and development, food processing, and storage. Students completing this will be able to apply the principles of scientific inquiry to solve problems related to biology and chemistry in highly advanced agricultural applications of food. This class counts as a 1 science credit per semester.

## **T5744 I Child Development ADV (5360)**

**Open to grades 9-12**

**2 semesters, 1 credit per semester**

**Meets requirements of: AHD, THD, CORE 40**

Semester one students will experience an introductory course that is 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 the three classes that may be taken as a group in lieu of Health & Safety. In this course, students will participate in an infant simulation experience with RealCare Baby Infant Simulators. If the opportunity arises, students may also be able to participate in an in-school lab gaining experience with young children through participation and observation.

## **T6732I & T6731I Early Childhood Education I & Principles (7158 & 7160)**

***Must take both concurrently***

**Open to grades 10-12**

**2 semesters, 2 credits per semester**

**Meets requirements of: AHD, THD, CORE 40**

**Recommended: Child Development/Advanced Child Development**

**Dual Credit may be available**

Early Childhood Education I prepares students for employment in early childhood education and related careers that involve working with children from birth to 8 years (3rd grade) and provides the foundations for study in higher education that leads to 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; developmentally appropriate practices of 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. While under the supervision of the instructor, students will lead a preschool for children ages 3-4 years during the second semester of the class.

## **T6733I & T6734I Early Childhood Education II & Capstone (7159 & 7259)**

***Must take both concurrently***

**Open to grades 11-12**

**2 semesters, 2 credits per semester**

**Meets requirements of: THD, AHD, Core 40**

**Prerequisite(s): Early Childhood Education I & Principles**

**Dual Credit may be available**

ECE II is a sequential course that builds on the foundational knowledge and skills of Early Childhood Education I, which is a required prerequisite. In ECE II students further refine and develop the skills of lesson planning and directly working with children. 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 to earn Dual Credit and will need to be completed on the student's own time. (A minimum total of 480 hours must be accrued in ECE I and ECE II.) These experiences may be either school-based (100 hours provided in class) or "on-the-job" in community-based early childhood education centers, or in a combination of the two. Students will be placed in community early childhood centers during the second semester.

## **T6742I & T6741I Education Professions I & Principles (7157 & 7161)**

***Must take both concurrently***

**Open to grades 10-12**

**2 semesters, 2 credits per semester**

**Meets requirements of: AHD, THD, CORE 40**

**Recommendation(s): Child Development/Advanced Child Development**

**Dual Credit may be available**

Education Professions I is an exciting hand-on exploration of learning 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 setting and career portfolios are required components. A standards-based plan guides the students' field experiences. Students are monitored in the 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.

## **T6743 I & T6744 I Education Professions II & Capstone (7162 & 7267)**

***Must take both concurrently***

**Open to grades 11- 12**

**2 semesters, 2 credits per semester**

**Meets requirements of: AHD, THD, CORE 40**

**Prerequisite(s): Education Professions I & Principles**

**Dual Credit may be available**

Designed 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 Education Professions II teacher. Articulation with postsecondary programs is encouraged.

## **T5750I Introduction to Cosmetology (7175)**

**Open to grades 9-10**

**2 semesters, 1 credit hour per semester**

**Meets requirements of: 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 C<sup>4</sup> Cosmetology program, which can lead to an Indiana Cosmetology License.

## **T67112, T67122, T67132 Cosmetology I, IA, & Principles (7330, 7331, & 7332)**

***Must take all three courses during the first year.***

**Open to grades 11-12**

**2 semesters, 3 credits per semester at McDowell.**

**Extra Clock Time until 5:30 p.m., Monday-Friday**

**Approximate costs to cover the Cosmetology kit, uniform, and labels.**

**Meets requirements of: THD, AHD, Core 40**

**Recommendation(s): Interpersonal Relationships**

**Prerequisite(s): Application and/or interview may be required.**

**Dual Credit may be available**

Cosmetology I is the first year of a two year pathway that focuses on basic practical skills and theories including roller control (wet styling), styling, shampooing, hair coloring, permanent waving, facials, waxing, manicuring, haircutting, business and personal ethics, and bacteriology and sanitation. In the second semester, greater emphasis is placed on the application and development of these skills. The State of Indiana requires a total of 1500 hours of instruction for licensure by the end of Cosmetology II. This class session meets 12:30 pm until 5:30 p.m. Students are required to provide their own transportation from class.

## **T67142 Cosmetology II Capstone (7334)**

**Open to grade 12**

**2 semesters, 3 credits per semester at McDowell.**

**Extra Clock Time until 5:30 p.m., Monday-Friday**

**Approximate costs to cover the Cosmetology kit, uniform, and labels.**

**Meets requirements of: THD, AHD, Core 40**

**Prerequisite(s): Cosmetology I, IA, & Principles**

**Dual Credit may be available**

Dual Credit with Vincennes University may be available per requirements.

Cosmetology II will cover the development of advanced skills in styling, hair coloring, permanent waving, facials and manicuring. Students will advance their skill working on patrons in the Cosmetology clinic area. Students will also study anatomy and physiology, professionalism, and salon management in relation to cosmetology.

This class session meets 12:30 pm until 5:30 p.m. Students are required to provide their own transportation home after class from McDowell.

## **T57210 Introduction to Culinary Arts (5438)**

**Open to grades 9-12**

**2 semesters, 1 credit per semester**

**Meets requirements of: AHD, THD, CORE 40**

Introduction to Culinary Arts and Hospitality Management 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 utilizes higher order thinking, communication, leadership, and management processes. Topics include basic culinary skills in the foodservice industry, safety and sanitation, nutrition, customer relations, and career investigation. Students are able to 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.

## **T6722I & T6721I Culinary Arts I & Principles (717I & 7173)**

***Must take both concurrently***

**Open to grades 10-12**

**2 semesters, 2 credits per semester**

**Meets requirements of: AHD, THD, CORE 40**

**Recommendation(s): Introduction to Culinary Arts & Hospitality I**

**Dual Credit may be available**

The Culinary Arts program offers unique opportunities for students interested in careers in the hospitality and restaurant industry. Students investigate a variety of possible professions in food, lodging, recreation or travel-related services. Units of instruction include basic culinary skills, service skills, food production skills, baking and pastry skills, marketing, purchasing, and management skills. The program can be individualized to meet any student's needs and offers an excellent opportunity for employment and can allow the student to

qualify for a national certification from the National Restaurant Association. Students continuing their education at a post-secondary level will have the opportunity to qualify for articulation agreements with both regional and national colleges and universities. On-the-job training in the community may be available to qualified students. Students can also become involved in the American Culinary Federation and participate in regional or state SkillsUSA – VICA competitions.

## **T6723 I & T6724 I Culinary Arts II & Capstone (7172 & 7237)**

***Must take both concurrently***

**Open to grades 11-12**

**2 semesters, 2 credits per semester**

**Meets requirements of: AHD, THD, Core 40**

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

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 the difference 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.

## **PROTECTIVE SERVICES**

### **T6750 I Introduction to Public Safety (7190)**

**Open to grades 9-12**

**2 semesters, 1 credit per semester**

**Meets requirements of: ADH, THD, CORE 40**

Introduction to Public Safety and First Responders introduces students to a variety of careers available and areas of interest including Fire Science, Criminal Justice, Homeland Security, Environmental Health and Safety, and Emergency Medical Services. The course is designed to help students create a career plan for the Public Safety sector which includes certification requirements and hiring practices.

### **T6752 I & T6751 I Criminal Justice I & Principles (7191 & 7193)**

***Must Take both Concurrently***

**Open to grades 11-12**

**2 semesters, 2 credits per semester**

**Meets requirements of: THD, AHD, Core 40**

**Recommendation(s): Introduction to Public Safety**

**Dual Credit may be 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 are reinforced through activities that model public relations and crime prevention efforts as well as the preparation of police reports. This course provides the opportunity for dual credit for students who meet postsecondary requirements for earning dual credit and successfully complete the dual credit requirements of this course.

### **T6753 I & T6754 I Criminal Justice II & Capstone (7188 & 7231)**

***Must take both concurrently***

**Open to grade 12**



**2 semesters, 2 credits per semester**

**Meets requirements of: THD, AHD, Core 40**

**Prerequisite(s): Criminal Justice I & Principles**

**Dual Credit may be available**

Criminal Justice II is an advanced course focusing on historical and cultural perspectives to help students understand the social and policy factors shaping crime. With a diverse and multidisciplinary approach, the course explores the American correctional system, administration of correctional agencies to the evolution of policies, criminal sentencing, and rehabilitation. Engaging discussions on current philosophies of corrections and debates on issues like technology and the treatment of special populations enrich the learning experience. Students will dive into the world of traffic control and forensic investigation, gaining practical skills through hands-on activities. By combining these elements, the course equips students with a comprehensive understanding of the complexities and ethical considerations in criminal justice, fostering critical thinking and analytical skills for navigating real-world challenges in the field. Students will also have the opportunity to acquire the Indiana State Corrections Certification (Jail School).

## **TRANSPORTATION CLUSTER**

### **T5503 I Introduction to Transportation (4798)**

**Open to grades 9-12**

**2 semesters, 1 credit per semester**

**Meets requirements of: THD, AHD, Core 40**

**Dual Credit may be available**

Introduction to Transportation 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 will gain and apply knowledge and skills in the safe application, design, production, and assessment of products, services, and systems relating 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.

**Note: Students who take Year I Auto at East will take Year II at North.**

**Students who take Year I Auto at North will take Year II at East.**

### **T6821 I & T6822 I Automotive Services Technology I & Principles (7213 & 7212)**

**Must take both concurrently**

**Open to grades 10-12**

**2 semesters, 2 credits per semester**

**Meets requirements of: AHD, THD, CORE 40**

**Recommendation(s): Introduction to Transportation**

**Dual Credit may be available**

Automotive Services Technology I is a one-year course that encompasses the sub topics of the ASE identified areas of Steering & Suspension, Electricity, and HVAC. 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, and engine repair shall be covered as time permits. The course meets the ASE program certifications for the two primary areas offered. This course provides the opportunity for dual credit for students who meet postsecondary requirements and successfully complete the dual credit requirements. Mathematical skills will be reinforced through precision measuring and cost estimation activities. Scientific principles taught 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.

## **T6823 I & T6824 I Automotive Services Technology II & Capstone (7212 & 7375)**

***Must take both concurrently***

**Open to grades 11-12**

**2 semesters, 2 credits per semester**

**Meets requirements of: AHD, THD, CORE 40**

**Prerequisite(s): Automotive Services Technology I & Principles**

**Dual Credit may be available**

Automotive Services Technology II is a one-year course that encompasses the sub topics of the ASE identified areas of Braking 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 yearlong instruction. Additional areas of manual transmissions /differentials, automatic transmissions, air conditioning, and engine repair should be covered as time permits. This one-year offering must meet the ASE program certifications for the two primary areas offered in this course. Mathematical skills will be reinforced through precision measuring and cost estimation activities. Scientific principles taught 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.