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## AGRICULTURE EDUCATION

### **Introduction to Agriculture, Foods and Natural Resources** 9-12

*Introduction to Agriculture, Foods and Natural Resources* is a yearlong course. The nature of this course is to provide students with an introduction to the fundamentals of agricultural science and business. Topics to be covered include: animal science, plant and soil science, food science, horticultural science, farm and agribusiness management, landscape management, natural resources management, agricultural mechanization, and supervised agricultural experience.

### **Agriculture Power, Structure and Technology** 10-12

*Agriculture Power, Structure and Technology* is a two semester, lab intensive course in which students develop an understanding of basic principles of selection, operation, maintenance and management of agricultural equipment in concert while incorporating technology. Topics covered include: safety, electricity, plumbing, concrete, carpentry, metal technology, engines, emerging technologies, leadership development, supervised agricultural experience and career opportunities in the area of agriculture power, structure and technology. **Prerequisites:** Introduction to Agriculture and/or permission from the teacher.

### **Agriculture Power, Structure and Technology II** 10-12

*Agriculture Power, Structure and Technology II* is a two semester, lab intensive course in which students develop a deeper understanding of basic principles of selection, operation, maintenance and management of agricultural equipment in concert while incorporating technology. Topics covered include: safety, electricity, plumbing, concrete, carpentry, metal technology, engines, emerging technologies, leadership development, supervised agricultural experience and career opportunities in the area of agriculture power, structure and technology. **Prerequisites:** Introduction to Agriculture, Ag Power Structure and Tech I and/or permission from the teacher.

### **Natural Resources Management** 10-12

*Natural Resources Management* is a one semester course that provides students with a background in natural resource management. Students are introduced to career opportunities in natural resource management and related industries, the history of the forest industry and forest policy, the importance and uses of forest plants, proper care and use of forest tools, effects of management practices on the environment, soil conservation practices, water and its importance to natural resource management, hazardous waste management, native wildlife, waterfowl and fish management, surveying and map use, management of recreational areas, outdoor safety and weather. **Prerequisites:** Introduction to Agriculture and/or permission from the teacher.

### **Horticulture Science** 10-12

*Horticulture Science* is a one semester course designed to give students a background in the field of horticulture. It addresses the biology and technology involved in the production, processing, and marketing of horticultural plants and products. Topics covered include: reproduction and propagation of plants, plant growth, growth media, management practices for field and greenhouse production, marketing concepts, production of herbaceous, woody and nursery stock, fruit, nut, and vegetable production, and pest management.

**Prerequisites:** Introduction to Agriculture and/or permission from the teacher.

### **Animal Science** 10-12

*Animal Science* is a yearlong course that provides students with an overall view of the field of animal science. All areas, which the students study, can be applied to large and small animals. Topics to be addressed include: anatomy and physiology, genetics, reproduction, nutrition, aquaculture, careers in animal science, common diseases and parasites, social and political issues related to the industry, and management practices for

the care and maintenance of animals. **Prerequisites:** Introduction to Agriculture and/or permission from the teacher.

### **Agribusiness Management** 10-12

*Agribusiness Management* is a yearlong course, which presents the concepts necessary for managing an agriculture-related business. Concepts covered include: identification of careers in agribusiness, safety management, entrepreneurship, the planning, organizing, controlling and directing of an agribusiness, effects of government organizations and laws on agribusiness, economic principles, credit, record keeping, budgeting, fundamentals of cash flow, taxation and the tax system, insurance, marketing, cooperatives, purchasing, computers in agribusiness, human resource management, and employer-employee relations and responsibilities. The course is currently being offered as a dual credit Project Xcel Vincennes University course. Dual credits are limited to juniors and seniors. **Prerequisites:** Introduction to Agriculture and/or permission from the teacher.

### **Supervised Agricultural Experience** 10-12

*Supervised Agricultural Experience (SAE)* is designed to provide students the opportunity to gain experience in the agricultural field(s) in which they are interested. Students experience and apply what is learned in the classroom to real-life situations. Students work closely with their agricultural science and business teacher(s), parents, and/or employers to get the most out of their SAE program. The course may be offered on an independent study basis.

## **ART**

### **Introduction to 2-Dimensional Art** 10-12

*Introduction to 2-Dimensional Art* introduces students to strategies for planning creative work, drawing objects realistically, and working with a variety of artistic media including drawing, printmaking, and painting. This course is based on the Indiana Academic Standards for Visual Art. Students taking this course engage in sequential learning experiences that encompass art history, art criticism, aesthetics, production, and integrated studies and lead to the creation of portfolio quality works. Students will view professional works of art and explore their historical and cultural connections; analyze, interpret, theorize, and make informed judgments about artwork and the nature of art; create two-dimensional works of art, reflect upon the outcomes, and revise their work; relate art to other disciplines and discover opportunities for integration; and incorporate literacy and presentational skills. This is a one semester course. Students must complete Intro to 2-D before moving on to Advanced 2-Dimensional Art.

### **Introduction to 3-Dimensional Art** 10-12

*Introduction to 3-Dimensional Art* gives students the opportunity to work with and experience a variety of three-dimensional media and techniques including ceramics, wire, paper mache, construction, and carving. The course is based on the Indiana Academic Standards for Visual Art. Students taking this class engage in sequential learning experiences that encompass art history, art criticism, aesthetics, production, and integrated studies and lead to the creation of portfolio quality works. Students will view professional works of art and explore their historical and cultural connections; analyze, interpret, theorize, and make informed judgments about artwork and the nature of art; create three-dimensional works of art, reflect upon the outcomes, and revise their work; relate art to other disciplines and discover opportunities for integration; and incorporate literacy and presentational skills. This is a one semester course. Students must complete Intro to 3-D before moving on to Ceramics.

### **Advanced Two-Dimensional Art** 11-12

*Advanced 2-D Art* is an intensive study of two-dimensional media and processes including graphite, charcoal, chalk and oil pastels, printmaking, watercolors, acrylics, and oil painting. Students will learn strategies for planning creative works and techniques for drawing a variety of subjects from life. This course is based on the Indiana Academic Standards for Visual Art and will build on the sequential learning experiences of Introduction to Two-Dimensional Art including art history, art criticism, aesthetics, and production. The course will lead to the creation and exhibition of portfolio quality work. Students will view professional works of art and explore their historical and cultural connections; analyze, interpret, theorize, and make informed judgments about artwork and the nature of art; create two-dimensional works of art, reflect upon the outcomes, and revise their work; relate art to other disciplines and discover opportunities for integration; and incorporate literacy and presentational skills. They will identify ways to utilize and support art museums, galleries, studios, and community resources. Introduction to 2-D art is a required prerequisite for this course.

### **Ceramics 11-12**

*Ceramics* will be an intensive study of clay, using wheel-throwing, hand-building, and glazing techniques. Types of wheel thrown projects include mugs, bowls, vases, and lidded forms. Hand-building examples include pinch pot, coil pot, slab construction, and figurative sculpture. Students will reflect upon and refine their work; explore cultural and historical connections; analyze, interpret, theorize, and make informed judgments about ceramic works of art; and incorporate literacy and presentational skills. This course is based on the Indiana Academic Standards for Visual Art. Introduction to 3-D art is a required prerequisite for this course.

## **BUSINESS**

### **Preparing for College and Careers 9-12**

*Career Planning and Success Skills* is a one-semester course designed to stress the essential knowledge, skills, and behaviors all students need to live successfully in today's world. This course may include exploring career goals, four-year career plans, researching job opportunities and the labor market, job search, applications, resumes, employee evaluations, job-survival skills, and the changing economy as it affects employment. Communication skills will be emphasized by extensive practice in reading, writing, listening, and speaking. Effective use of community resources will be utilized.

### **Digital Applications and Responsibility 9-12**

*Digital Applications and Responsibility* is a one or two-semester course that extends student knowledge of the physical components and operation of computers while focusing on current ethical and social issues. Technology is used to build students decision - making and problem - solving skills through the use of word processing, spreadsheet, presentation and database software. Through participation in Business Professionals of America students are given the opportunity to seek an industry - recognized digital literacy. . When taken for two consecutive semesters within one school-year, students have the opportunity to earn college credit. **Prerequisite:** None, strong math skills are recommended.

### **Computer Illustrations and Graphics 9-12**

*Illustration and Graphics* introduces students to the computer's use in visual communication. The focus of the course is on basic computer terminology and use, mastering fundamental skills, and developing efficient working styles. These skills are then developed by creating work with imaging, drawing, interactive, and page layout software. The 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, produce vector illustrations, graphics and logos, and artwork in addition to incorporation of photographic images. Communication skills will be emphasized through the study of effective methods used to design products that impart information and ideas. Advanced instruction might also include experiences in silk screening and air brush techniques as well as activities in designing product packaging and commercial displays or exhibits.

### **Introduction to Business** 9-12

Introduction to Business is a one semester course that introduces students to the world of business, including the concepts, functions, and skills required for meeting the challenges of operating a business in the twenty-first century on a local, national, and international scale. The course covers business management, entrepreneurship, marketing fundamentals, and business ethics and law. The course develops business vocabulary and provides an overview of business and the role that business plays in economic, social and political environments.

### **Introduction to Accounting** 10-12

All assignments and tests are completed online in the *Accounting* course. Understanding the accounting cycle is the basis of a first-year accounting course. It is important that first-year students begin with the simple accounting cycle and proceed to the complex systems. Since all businesses use the same basic principles of accounting, it is realistic for first-year students to study the accounting cycle for a sole-proprietorship, partnership, and corporation. The content is based on the balance sheet approach.

### **Computer Science I** 9-12

*Computer Science I* explores and builds skills in creating programs/applications. The course provides a basic understanding of the fundamentals of procedural program development using structures and modular concepts. It emphasizes logical program design involving user-defined functions and standard structure elements. Discussions will include the role of data types, variables, structures, addressable memory locations, arrays and pointers. Data file access methods are also presented. The development of programming skills will provide a basic understanding of the fundamental concepts which involve task oriented program functions. Applications are built by selecting forms, objects, and controls, assigning properties and writing and testing code. **Prerequisite:** Algebra I **Note – this course is only offered during odd graduation years.**

### **Computer Science II:** 10-12

*Computer Science II: Programming* explores and builds skills in C++. The study of C++ provides a basic understanding of the fundamentals of procedural program development using structured, modular concepts and emphasizes logical program design involving user-defined functions and standard structure elements. Discussions will include the role of data types, variables, structures, addressable memory locations, arrays and pointers. Data file access methods are also presented. The development of programming skills will provide a basic understanding of the fundamental concepts with an emphasis on logical program design using a modular approach which involves task-oriented program functions. Applications are built by creating procedures: assigning properties and writing code. **Prerequisite:** Algebra I **Note – this course is only offered during even graduation years.** Computer Science I is NOT a prerequisite.

### **Computer Science AAP 11-12**

*Computer Science A, Advanced Placement* is a business mathematics course that provides students with the content established by the College Board. The course emphasizes object-oriented programming methodology with a concentration on problem solving and algorithm development, and also includes the study of data structures, design, and abstraction. The course provides students an alternative to taking pre-calculus or calculus to fulfill the four-year math requirement for graduation for the AHD. This class will be used to calculate a weighted GPA. **Prerequisite:** Algebra II

### **Interactive Media 10-12**

*Interactive Media* prepares students for careers in business and industry working with interactive media products and services; which includes the entertainment industries. This course emphasizes the development of digitally generated or computer-enhanced products using multimedia technologies. Students will develop an understanding of professional business practices including the importance of ethics, communication skills, and knowledge of the “virtual workplace”. **Prerequisite:** Algebra I

### **Web Design 11-12**

*Web Design* is a course that provides instruction in the principles of web design using HTML/XHTML and current/emerging software programs. Areas of instruction include audience analysis, hierarchy layout and design techniques, software integration, and publishing. **Prerequisite:** Digital Applications and Responsibility and Interactive Media

### **Business Law and Ethics 10-12**

*Business Law and Ethics* is a full year course that shows students the evolving set of rules that form our legal structure with a focus on both the substance and the process of our legal system. Students will encounter and explore important social and ethical issues as well as practical issues related to their daily lives, both now and in the future. Students will participate in a mock trial and visit the Youth Care Center and Vanderburgh County Courthouse in Evansville. Several guest speakers from the law enforcement community will also visit the class.

### **Technical Business Communications 12**

*Technical Business Communications* is a one-semester business class that provides students with effective communication and problem-solving skills. Areas of study include written/oral/visual communication, listening, informational reading, Internet research/analysis, and electronic communication. Concepts addressed will include adapting communication to the situation, purpose, and audience. Students produce documents related to college, scholarship, and career research, college and scholarship applications and essays, personal business letters, and resumes. Knowledge of word processing required.

### **Personal Financial Responsibility 11-12**

*Personal Finance* is a one-semester business course that focuses on personal financial planning. The majority of the work completed in class is done on the computer. The content includes: balancing a checkbook, insurance, saving, interest rates and calculation, home loans, auto loans, credit cards, and much more. Students will learn financial concepts and principles that provide a basis for avoiding financial pitfalls. This class includes guest speakers, internet research, and team projects.

### **Principles of Marketing 10-12**

*Principles of Marketing* 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. We will be running the Viking Express clothing business during the 1<sup>st</sup> semester.

### **Principles of Business Management- Yearbook year 1** 10-12

### **Administrative & Office Management- Yearbook year 2** 11-12

*Yearbook* is journalistic in nature and allows students to participate in the production of the school yearbook. Students in this course are required to learn layout design; write and fit copy, captions, and head lines; sell advertisements; learn basic photography skills; and should be proficient on a computer. Individual responsibility is essential toward completion of assignments for deadlines. Student will also have the opportunity to accept leadership positions and develop new skills as they build the yearbook. **Prerequisites:** One semester of Interactive Media or Illustrations and Graphics and Digital Applications and Responsibility or teacher permission.

### **Work Based Learning** 12

DOE Code: 5974 Work Based Learning, Multiple Pathways

*Work Based Learning Capstone* is a 1-3 credit culminating course in a student's logical sequence of courses for a chosen career pathway. In this course, students have the opportunity to apply the concepts, skills, and dispositions learned in previous coursework in their pathways in real world business and industry settings. Therefore, at least two courses in a student's pathway would be prerequisite to the student enrolling in the stand-alone WBL courses. Students have the opportunity to be released for up to 3 periods. **Required Prerequisites:** Preparing for College and Careers; 4 credits of introductory and advanced courses related to a student's pathway.

### **Information Technology Support** 10-12

*Information Technology Support* 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.

**Prerequisite:** Digital Applications and Responsibility, Computer Science I or II Recommended

## **ENGLISH/LANGUAGE ARTS**

### **English 9**

English 9, an English course based on the Indiana Academic Standards for English/Language Arts in Grades 9-10, is a study of language, literature, composition, and oral communication, focusing on literature within an appropriate level of complexity for this grade band. Students use literary interpretation, analysis, comparisons, and evaluation to read and respond to representative works of historical or cultural significance in classic and contemporary literature balanced with nonfiction. Students write responses to literature, expository (informative), narrative, and argumentative/persuasive compositions, and sustained research assignments. Students deliver grade-appropriate oral presentations with attention to audience and purpose and access, analyze, and evaluate online information.

### **English 9-Honors**

English 9 Honors, an accelerated English course based on the Indiana Academic Standards for English/Language Arts in Grades 9-10, is a study of language, literature, composition, and oral communication,

focusing on literature within an appropriate level of complexity for this grade band. Students use literary interpretation, analysis, comparisons, and evaluation to read and respond to representative works of historical or cultural significance in classic and contemporary literature balanced with nonfiction. Students frequently write responses to literature, expository (informative), narrative, and argumentative/persuasive compositions, and sustained research assignments. Students deliver grade-appropriate oral presentations with attention to audience and purpose and access, analyze, and evaluate online information. Students are expected to complete a summer reading assignment prior to the start of the course; additionally, students will complete a majority of the course reading independently.

### **English 10**

English 10, an English course based on the Indiana Academic Standards for English/Language Arts in Grades 9-10, is a study of language, literature, composition, and oral communication, focusing on literature with an appropriate level of complexity for this grade band. Students use literary interpretation, analysis, comparisons, and evaluation to read and respond to representative works of historical or cultural significance in classic and contemporary literature balanced with nonfiction. Students write responses to literature, expository (informative) and argumentative/persuasive compositions, and sustained research assignments. Students deliver grade appropriate oral presentations with attention to audience and purpose and access, analyze, and evaluate online information.

### **English 10 – Honors**

English 10, an accelerated English course based on the Indiana Academic Standards for English/Language Arts in Grades 9-10, is a study of language, literature, composition, and oral communication, focusing on literature with an appropriate level of complexity for this grade band. This course will prepare students for the rigorous work involved in AP English Literature and Composition. Students use literary interpretation, analysis, comparisons, and evaluation to read and respond to representative works of historical or cultural significance in classic and contemporary literature balanced with nonfiction. Students write responses to literature, expository (informative) and argumentative/persuasive compositions, and sustained research assignments. Students deliver grade appropriate oral presentations with attention to audience and purpose and access, analyze, and evaluate online information. Students are expected to complete a summer reading assignment prior to the start of the course; additionally, students will complete a majority of the course reading independently.

### **English 11**

English 11, an English course based on the Indiana Academic Standards for English/Language Arts in Grades 11-12, is a study of language, literature, composition, and oral communication focusing on literature with an appropriate level of complexity for this grade band. Students use literary interpretation, analysis, comparisons, and evaluation to read and respond to representative works of historical or cultural significance appropriate in classic and contemporary literature balanced with nonfiction. Students write narratives, responses to literature, academic essays (e.g. analytical, persuasive, expository, summary), and more sustained research assignments incorporating visual information in the form of pictures, graphs, charts and tables. Students write and deliver grade-appropriate multimedia presentations and access, analyze, and evaluate online information.

### **English 11 Advanced Placement Literature and Composition**

The AP English Literature and Composition course focuses on reading, analyzing, and writing about imaginative literature (fiction, poetry, drama) from various periods. Students engage in close reading and critical analysis of imaginative literature to deepen their understanding of the ways writers use language to provide both meaning and pleasure. As they read, students consider a work's structure, style, and themes, as well as its use of



figurative language, imagery, and symbolism. Writing assignments include expository, analytical, and argumentative essays that require students to analyze and interpret literary works. AP English Literature and Composition offers students the opportunity to receive college credit that aligns to an introductory college-level literature and writing curriculum. Students are expected to complete a summer reading assignment prior to the start of the course; additionally, students will complete a majority of the course reading independently. This class will be used to calculate a weighted GPA.

### **English 12**

English 12, an English course based on the Indiana Academic Standards for English/Language Arts for Grades 11- 12, is a study of language, literature, composition, and oral communication focusing on an exploration of point of view or perspective across a wide variety of genres. Students use literary interpretation, analysis, comparisons, and evaluation to read and respond to representative works of historical or cultural significance in classic and contemporary literature balanced with nonfiction. Students write narratives, responses to literature, academic essays (e.g. analytical, persuasive, expository, summary), and more sustained research assignments incorporating visual information in the form of pictures, graphs, charts and tables. Students write and deliver grade-appropriate multimedia presentations and access, analyze, and evaluate online information.

### **English 12 Advanced**

English 12, an accelerated English course based on the Indiana Academic Standards for English/Language Arts for Grades 11- 12, is a study of language, literature, composition, and oral communication focusing on an exploration of point of view or perspective across a wide variety of genres. Students use literary interpretation, analysis, comparisons, and evaluation to read and respond to representative works of historical or cultural significance in classic and contemporary literature balanced with nonfiction. Students write narratives, responses to literature, academic essays (e.g. analytical, persuasive, expository, summary), and more sustained research assignments incorporating visual information in the form of pictures, graphs, charts and tables. Students write and deliver grade-appropriate multimedia presentations and access, analyze, and evaluate online information. The course is designed to prepare students for college freshman English composition classes.

### **English 12 Language and Composition (Advanced Placement/College Achievement Program)**

AP English Language and Composition offers students the opportunity to earn dual high school and college credit in one of the following ways: (1) through the College Board's Advanced Placement English Language and Composition Exam or (2) through the College Achievement Program (CAP) offered by the University of Southern Indiana. The AP English Language and Composition course focuses on the development and revision of evidence-based analytic and argumentative writing, the rhetorical analysis of nonfiction texts, and the decisions writers make as they compose and revise. Students evaluate, synthesize, and cite research to support their arguments. Additionally, they read and analyze rhetorical elements and their effects in nonfiction texts—including images as forms of text— from a range of disciplines and historical periods. Students are expected to complete a summer reading assignment prior to the start of the course; additionally, students will complete a majority of the course reading independently. This class will be used to calculate a weighted GPA. Students who are interested in taking this CAP class must sign up for at least the 2nd semester of AP Literature their junior year. Students will need to choose whether they want to take this class as an AP class or as a dual credit through the CAP program.

## HEALTH AND PHYSICAL EDUCATION

### **Physical Education** 9

*Physical Education* is designed to develop a student in the three domains of learning: Cognitive skills, psychomotor skills and social skills. All of the domains help the students to develop as well-rounded individuals. Emphasis is also placed on full, daily participation, cardio respiratory fitness, and the development of lifetime sports. This course is required for graduation.

### **Strength and Conditioning** 10-12

*Strength and Conditioning* is designed to generate and facilitate student interest in lifetime fitness. Topics covered include: simple exercise physiology, biomechanics of muscle movement, and the benefits of lifetime fitness/fundamentals of how to achieve it. Emphasis is also placed on full-daily participation, cardiovascular fitness, progressive resistance weight training, and daily journal entries. **Prerequisite:** student must complete two semesters of basic physical education.

### **Team Sports** 10-12

*Team Sports* is designed to participate as a team in sports such as: basketball, volleyball, baseball and football. Students will also have the opportunity to learn specific rules and variations of each sport. **Prerequisite:** Students must complete two semesters of basic physical education.

### **Aerobics and Walking** 10-12

*Aerobics and Walking* is designed to enhance the student's knowledge and interest in lifetime fitness. Topics covered include: speed walking, jogging, step aerobics, yoga, tae bo, and resistance training. Emphasis is placed on full-daily participation and trying to improve your cardiovascular fitness. **Prerequisite:** Students must complete two semesters of basic physical education.

### **Health and Wellness** 9-12

In *Health and Wellness* class, our aim is to help young people recognize and resolve the questions and problems regarding their health, which they now face as well as those they will encounter as adults. The course provides the students with basic knowledge of how their bodies function and of how behavior is related to emotional needs. This course is required for graduation

## MATHEMATICS

### **Algebra I** 9-12

The objective of this course is to teach students algebra as a useful tool for problem solving. This course is intended as an introductory course to teach the basic skills and concepts of algebra necessary for further study in mathematics. These include an understanding of the rational number system and its properties, solving equalities and inequalities, working with polynomials, factoring, graphing, linear equations, Pythagorean Theorem, radical expressions and equations.

### **Business Math** 10

*Business Math* is a business course designed to prepare students for roles as entrepreneurs, producers, and business leaders by developing abilities and skills that are part of any business environment. A solid understanding of math including algebra, basic geometry, statistics and probability provides the necessary foundation for students interested in careers in business and skilled trade areas. The content includes mathematical operations related to accounting, banking and finance, marketing, and management. Instructional

strategies should include simulations, guest speakers, tours, Internet research, and business experiences. Special permission is required for this course.

### **Algebra II 9-12**

*Algebra II* is a one-year course for the second-year algebra student. The course will expand upon concepts learned in Algebra I. The course of study includes, but is not limited to, linear equations and functions, inequalities, polynomials, matrices, rational expressions, irrational and complex numbers, quadratic equations and functions, radicals, logarithms and exponential functions, conic sections, probability, sequences and series.

### **Adv. Math College Credit- Algebra II Honors 9-12**

*Algebra II Honors* is a one-year course for the second-year algebra students who have strong math skills. The course will expand upon concepts learned in Algebra I. The course of study includes, but is not limited to, linear equations and functions, inequalities, polynomials, matrices, rational expressions, irrational and complex numbers, quadratic equations and functions, radicals, logarithms and exponential functions, conic sections, probability, sequences and series. This course is recommended for students who are on track to receive the Academic Honors Diploma and who plan to take pre-calculus. **Prerequisite:** Students should have a B or better in Algebra I and Geometry Honors.

### **Geometry 10-12**

*Geometry* is a one-year course for students who plan to pursue at least a two-year college career degree program. It is designed for students who learn best in an experimental manner involving personal participation, hands-on activities, and group relationships. These students, individually and as a team, will apply properties of geometry and trigonometry to occupational situations. They will collect, organize, represent, analyze and make predictions from data utilizing technology as set forth in the core curriculum competencies established by the Southwest Indiana Tech Prep Consortium. The concepts are taught using concrete, tangible examples and problems taken from real-world experience. The approach is intended to help students develop high level skills needed in today's workplace and in a rapidly changing technological society. This is a core 40 course. Students must have passed Algebra I and Algebra II.

### **Geometry Honors 10-12**

*Geometry Honors* is intended to develop student proficiency in geometric skills and concepts. It teaches the student to organize his/her ideas and develop logical reasoning abilities which will lead to the development of a geometric proof. Proofs based upon undefined and defined terms, postulates, and theorems make extensive use of inductive and deductive reasoning. In addition students learn the construction of geometric figures, coordinate geometry, and develop an understanding of loci and transformations. Computer technology is incorporated into the course through the use of the Geometers' Sketchpad. **Prerequisite:** Students should have at least a "C" each semester in Algebra I.

### **Integrated Math I 9-10**

Integrated Mathematics I formalizes and extends the mathematics students learned in the middle grades. The critical areas deepen and extend understanding of linear relationships, in part by contrasting them with exponential phenomena, and in part by applying linear models to data that exhibit a linear trend. Integrated Mathematics I uses properties and theorems involving congruent figures to deepen and extend understanding of geometric knowledge from prior grades. The final unit in the course ties together the algebraic and geometric ideas studied. The eight Process Standards for Mathematics apply throughout the course. Together with the content standards, the Process Standards prescribe that students experience mathematics as a coherent, useful, and logical subject that makes use of their ability to make sense of problem situations.

- Counts as a Mathematics course for all diplomas
- Fulfills the Algebra I/Integrated Mathematics I requirement for all diplomas

### **Integrated Math II** 10-11

Integrated Mathematics II focuses on quadratic expressions, equations, and functions by comparing their characteristics and behavior to those of linear and exponential relationships from Integrated Mathematics I. The need for extending the set of rational numbers arises and real and complex numbers are introduced so that all quadratic equations can be solved. The link between probability and data is explored through conditional probability and counting methods, including their use in making and evaluating decisions. The study of similarity leads to an understanding of right triangle trigonometry and connects to quadratics through Pythagorean relationships. Circles, with their quadratic algebraic representations, rounds out the course. The eight Process Standards for Mathematics apply throughout the course. Together with the content standards, the Process Standards prescribe that students experience mathematics as a coherent, useful, and logical subject that makes use of their ability to make sense of problem situations. Recommended Prerequisites: Integrated Mathematics I • Credits: 2 semester course, 1 credit per semester • Counts as a Mathematics course for all diplomas • Fulfills the Geometry/Integrated Mathematics II requirement for the Core 40, Core 40 with Academic Honors and Core 40 with Technical Honors diplomas.

### **Finite Mathematics** 11-12

*Finite Mathematics* is an umbrella of mathematical topics. It is a course designed for students who will undertake higher-level mathematics in college that may not include calculus. Topics include: (1) counting techniques, (2) matrices, (3) recursion, (4) graph theory, (5) social choice, (6) linear programming, and (7) game theory. Technology, such as computers and graphing calculators, should be used frequently. This is a one semester core 40 and academic honors course. **Prerequisite:** Students must have passed Algebra I, Algebra II and Geometry.

### **Probability and Statistics** 11-12

*Probability and Statistics* includes the concepts and skills needed to apply statistical techniques in the decision-making process. Topics include: (1) descriptive statistics, (2) probability, and (3) statistical inference. Practical examples based on real experimental data are used throughout. Students plan and conduct experiments or surveys and analyze the resulting data. The use of graphing calculators and computer programs is encouraged. This is a one semester core 40 and academic honors course. **Prerequisite:** Students must have passed Algebra I, Algebra II and Geometry.

### **Pre-Calculus/Trigonometry** 11-12

*Pre-calculus/Trigonometry* is a two-semester course intended to prepare a student for calculus. It is assumed that a student taking this course has a strong foundation in algebra and geometry. The course emphasizes algebraic, quadratic, trigonometric, exponential and logarithmic functions and their graphs. Other topics discussed include trigonometric identities, vectors, analytic geometry, matrices, sequences and probability. The student becomes proficient in the use of the scientific calculator and is introduced to the use of the graphing calculator. **Prerequisites:** Students should have at least a “C” for each semester in Algebra II and Geometry Honors or a “B” or better in Algebra II and Geometry.

### **AP Calculus AB** 12

*AP Calculus* is designed to introduce our students to the many concepts of college calculus. Functions, derivatives, applications of derivatives, integration, continuity, limits, differentials, and the applications of the differential are covered in this two-semester course. Students can earn college credit by scoring a 3 or higher on the AP exam. This class will be used to calculate a weighted GPA.

## **MUSIC**

### **Intermediate Band** 9-12

The *North Posey High School Band* prepares and performs a wide variety of music, combining physical and musical development through marching and concert activity. Annual performance in festivals, contests, tours and local programs expose instrumental music students to a broad program of recognition of musical ability, discipline, and achievement toward musical ideals.

### **Intermediate Chorus** 9-12

*Concert Choir* is a mixed-gender ensemble dedicated to the study and performance of intermediate-advanced choral music. Students perform, create, and respond to music from all major historical periods and world languages. Students are expected to participate in a limited number of vocal workshops, festivals, tours, and required concerts throughout the year. Specific course topics include vocal anatomy & technique, Singer's Diction, music literacy, ear/aural training, music history, poetry & language arts, music expression, individual professionalism, and careers in music. Students are expected to learn and practice music individually via technology to prepare for daily rehearsal. Concert Choir has no specific prerequisite, but students are highly recommended to have some experience in music and foreign language to be especially successful. Private lessons are available for students of any age or skill level who pursue the annual ISSMA Solo & Ensemble Festival in February.

### **Music Theory and Composition** 10-12

*Music Theory and Composition* deals with four skill areas, including written harmony, keyboard harmony (previous piano knowledge not required), ear training and sight singing. Some prerequisite skills are required in reading notation of rhythm and pitch. Some experience in performance is desirable. The work is designed for the senior or junior level. The student will solve both theoretical and practical problems in analyzing existing music. Activities include arranging given melodies and creating original music in both vocal and instrumental styles. Works of music from antiquity to the present day are analyzed and performed. The semesters' work closes with a final project in which the student creates an original work to be performed in class. This is a one semester course that is open to all students, not just those in band or chorus.

### **Music History and Appreciation** 10-12

*Music History and Appreciation* is designed to teach students to value music in their own lives and as an essential ingredient in everyone's life. It is an active study of how music says who we are as human beings and how we express ourselves through music. This is a one semester course that is open to all students, not just those in band or chorus.

## **Other**

### **Student Worker/Study Hall**

North Posey High School no longer has the traditional study halls. Students who would like to be a student worker must have a 2.7 cumulative GPA and complete an application specifying who they would like to work for. A signature from the faculty member is a required part of the application.

### **Math Lab** 9-12

*Mathematics Lab* provides students with individualized instruction designed to support success in completing mathematics coursework aligned with Indiana's Academic Standards for Mathematics. This course is designed to work with students who need remediation for the End of Course assessment in Algebra I.

### **Language Arts Lab** 9-12

*Language Arts Lab* is a supplemental course that provides students with individualized or small group instruction designed to support success in completing language arts course work aligned with Indiana's Academic Standards for English/Language Arts in Grades 9-12 and the Common Core State Standards for

English/Language Arts, focusing on the Writing Standards. This course is designed to work with students who need remediation for the End of Course assessment in English 10.

## SCIENCE

### **Biology I** 9

*Biology I* provides regular laboratory and literature investigation into the study of structure and function of the organisms from the components of the cell to the anatomy of and physiology of the entire organism. This is to include the function and processes of the cell, tissue, organ, and systems of various species of organisms. This study is to include their interdependence within population, communities, ecosystems, and the biosphere. Students have the opportunity to gain knowledge of the history of biology, careers in biology; and cope with biological questions and problems related to personal and social issues. Students experience the use of the scientific method as a method of problem solving not only in science but also in daily life activities.

### **Integrated Chemistry/Physics** 10-12

*Integrated Chemistry/Physics* introduces the fundamental concepts of scientific inquiry, the structure of matter, chemical reactions, forces, motion, and the interactions between energy and matter. The course can serve as a laboratory based introduction to possible future course work in chemistry or physics. The course may also be taken instead of Chemistry or Physics, thereby providing the student who does not intend to enter a science related field, a broad background in both subjects. It is recommended that students take Algebra prior to or concurrent with Integrated Chemistry/Physics. **Prerequisite:** Student must have passed Biology I

### **Chemistry I** 10-12

*Chemistry I* allows students to synthesize useful models of the structure of matter and the mechanisms of its interactions through laboratory investigations of matter and its chemical reactions. Students have the opportunity to: (1) gain an understanding of the history of chemistry, (2) explore the uses of chemistry in various careers, (3) cope with chemical questions and problems related to personal needs and social issues, and (4) learn and practice laboratory safety. The historical background is used, in many concepts, to develop and show the evolutionary process involved in the synthesis of the present accepted chemical knowledge. **Prerequisite:** Must have passed Algebra I with a C- or better both semesters.

### **Anatomy & Physiology** 11-12

*Anatomy & Physiology* is a course in which students investigate and apply concepts associated with human anatomy and physiology. Concepts covered include the process of homeostasis and the essentials of human function at the level of genes, cells, tissues, and organ systems. Students will understand the structure, organization, and function of the various components of the healthy human body in order to apply this knowledge in all health-related fields.

The course should include ample laboratory experiences that illustrate the application of the standards to the appropriate cells, tissues, organs, and organ systems. Dissection is both appropriate and necessary. Students should be able to use basic laboratory equipment such as microscopes, balances, and pipettes. This class will be used to calculate a weighted GPA. **Perquisite:** Student should have a B- or better in biology I.

### **Chemistry II** 11-12

In *Chemistry II*, the first semester is an intensive study of the more advanced mathematical concepts. Some of these concepts may be a review of Chemistry I while others are from new material. The second semester consists of concentrated approach to acids and bases including calculations involving strong and weak acids and bases. We will balance oxidation-reduction reactions, using two different methods. There will be some organic chemistry, stressing nomenclature and very basic reactions. The last few weeks will be spent on qualitative analysis to improve the laboratory techniques of the student. The main purpose of this course is to give students a solid foundation for college chemistry. **Prerequisites:** Students must have taken Chemistry I and

received a “B-” or above. Otherwise special permission from the teacher is needed. It is highly recommended that Chemistry II be taken the year following Chemistry I. This class will be used to calculate a weighted GPA.

### **Earth and Space Science I 10,11,12**

*Earth and Space Science I* is a course focused on the following core topics: study of the earth’s layers; atmosphere and hydrosphere; structure and scale of the universe; the solar system and earth processes. Students analyze and describe earth’s interconnected systems and examine how earth’s materials, landforms, and continents are modified across geological time. Instruction should focus on developing student understanding that scientific knowledge is gained from observation of natural phenomena and experimentation by designing and conducting investigations guided by theory and by evaluating and communicating the results of those investigations according to accepted procedures. **Prerequisite:** ICP or Chemistry I

### **AP PHYSICS 1: 11,12**

AP Physics1 is a course based on the content established and copyrighted by the College Board. The course is not intended to be used as a dual credit course. AP Physics 1: Algebra based is equivalent to a first-semester college course in algebra-based physics. The course 23 Indiana Department of Education High School Course Titles and Descriptions covers Newtonian mechanics (including rotational dynamics and angular momentum); work, energy, and power; mechanical waves and sound. It will also introduce electric circuits. Recommended Grade Level: 11, 12 Recommended Prerequisite: Geometry Credits: 2 semester course, 1 credit per semester Counts as a Science Course for all diplomas. Qualifies as a quantitative reasoning course.

### **AP PHYSICS 2: 12**

AP Physics2 is a course based on the content established and copyrighted by the College Board. The course is not intended to be used as a dual credit course. AP Physics 2: Algebra based is equivalent to a second-semester college course in algebra-based physics. The course covers fluid mechanics; thermodynamics; electricity and magnetism; optics; atomic and nuclear physics. Recommended Grade Level: 12 Recommended Prerequisite: AP Physics 1: Algebra-based Credits: 2 semester course, 1 credit per semester Counts as a Science Course for all diplomas. Qualifies as a quantitative reasoning course.

### **Principles of the Biomedical Sciences 9-12**

*Principles of Biomedical Sciences* provides an introduction to this field through “hands-on” projects and problems. Student work involves the study of human medicine, research processes and an introduction to bioinformatics. Students investigate the human body systems and various health conditions including heart disease, diabetes, hypercholesterolemia, and infectious diseases. A theme through the course is to determine the factors that led to the death of a fictional person. After determining the factors responsible for the death, the students investigate lifestyle choices and medical treatments that might have prolonged the person’s life. Key biological concepts included in the curriculum are: 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. The course is designed to provide an overview of all courses in the Biomedical Sciences program and to lay the scientific foundation necessary for student success in the subsequent courses. This course can count as a third year science class for Core 40 and Academic Honors diplomas.

### **Human Body Systems 10-12**

*Human Body Systems* is the second course in the Project Lead the Way Biomedical sequence. Students examine the processes, structures, and interactions of the human body systems to learn how they work together to maintain homeostasis (internal balance) and good health. Using real-world cases, students take the role of biomedical professionals and work together to solve medical mysteries. Hands-on projects include designing experiments, investigating the structures and functions of the body systems and using data acquisition software

to monitor body functions such as muscle movement, reflux and voluntary actions and respiratory operations. Important concepts covered in the course are communication, transport of substances, locomotion, metabolic processes, defense, and protection. Prerequisite: Principles of Biomedical Sciences

### **Medical Interventions (MI)** 11-12

In *Medical Interventions* students investigate the variety of interventions involved in the prevention, diagnosis and treatment of disease as they follow the lives of a fictitious family. The course is a “How-To” manual for maintaining overall health and homeostasis in the body as students explore: how to prevent and fight infection; how to screen and evaluate the code in human DNA; how to prevent, diagnose and treat cancer; and how to prevail when the organs of the body begin to fail. Through these scenarios, students are exposed to the wide range of interventions related to immunology, surgery, genetics, pharmacology, medical devices, and diagnostics. Lifestyle choices and preventive measures are emphasized throughout the course as well as the important roles scientific thinking and engineering design play in the development of interventions of the future. This class will be used to calculate a weighted GPA. Prerequisite: Principles of Biomedical Sciences and Human Body Systems

### **Biomedical Innovation (BI)** 12

*Biomedical Innovations* is a capstone course where students apply their knowledge and skills to answer questions or solve problems related to the biomedical sciences. Students design innovative solutions for the health challenges of the 21st century as they work through progressively challenging open-ended problems, addressing topics such as clinical medicine, physiology, biomedical engineering, and public health. They have the opportunity to work on an independent project and may work with a mentor or advisor from a university, hospital, physician’s office, or industry. Throughout the course, students are expected to present their work to an adult audience that may include representatives from the local business and healthcare community. Prerequisite: Principles of Biomedical Sciences, Human Body Systems and Medical Interventions

## **SOCIAL STUDIES**

### **Geography/History of the World** 9-12

*World Geography*, a two-semester course open to all students, is a combination of regional, physical, economic and political geography. This course is designed to help students better understand the activities of man under varying conditions on the Earth. World Geography provides students with an examination of the basic concepts and principles of geography. Major aspects of physical geography--climate, biomes, plate tectonics, landforms, hydrologic cycle, atmosphere, vegetation patterns, and earth in space--are emphasized. Understanding basic map skills, types of maps, map parts and globes is a major goal. Political geography is another critical theme. World countries, cultures and peoples are presented to students.

### **World History/Civilization** 9-12

*World History*, a two-semester course open to all students, is the study of people from their early beginnings through their evolving and developing stages, to their complex states today. Numerous time periods and topics are investigated as students study history of human beings on the planet Earth. Particular attention will be given to the variety of ideas, cultures, and movements that have graced the course of world history. World History permits the student to study and experience the history of humankind from its earliest development to the present day.

### **Anthropology** 11-12

*Anthropology* is a one-semester course available to juniors and seniors. Anthropology is the study of humans and all of their physical and cultural adaptations to their environment. Students will study the evolution of humans and their behavior, human variation and marriage and kinship. Cultural variations and cultural



change will be emphasized. Other topics discussed include law and order, religion, and the historical background of anthropology.

### **Modern World Civilization 11-12**

*Modern World Civilization* is a one-semester course offered to any student who has taken World History or World Geography. Particular attention will be paid to special topics and issues such as 20th Century wars, social movements, and fads and fashions. The relevance of these issues will be applied to how they have affected and influenced the lives of Americans today.

### **United States History 11**

*United States History* two-semester course, which is required for juniors, is a survey of the political, social, cultural, and economic phases of American life from the 15th century to the present. This class builds upon concepts developed in previous studies of American history. The study of American history has two major goals: (1) to include in our youth a sense of our past and an understanding of the democratic ideals on which our political, economic, and social development have been based; (2) to provide students with a framework within which they can develop the skills of critical thinking, problem-solving, and decision-making that will enable them to meet creatively and intelligently the challenges of a changing world.

### **United States History Honors 11**

*US History Honors* offers students the opportunity to earn dual high school and college credit through the College Achievement Program (CAPS) offered by the University of Southern Indiana. The U.S. History Honors course is designed to provide students with the analytic skills and factual knowledge necessary to deal critically with the problems and materials in U.S. history. The program prepares students for intermediate and advanced college courses by making demands upon them equivalent to those made by full-year introductory college courses. Students should learn to assess historical materials—their relevance to a given interpretive problem, reliability, and importance—and to weigh the evidence and interpretations presented in historical scholarship. A U.S. History Honors course should thus develop the skills necessary to arrive at conclusions on the basis of an informed judgment and to present reasons and evidence clearly and persuasively in essay format. This class will be used to calculate a weighted GPA.

### **Government 12**

*Government*, a required one-semester course for seniors, is the study of the formulation and foundation of systems of rule among groups of people. Specific emphasis is placed upon the United States government. Students will study the philosophy of government and its principles and practices. Students will understand how government is divided into three branches at three levels in the United States. Emphasis will also be placed on the study of citizenship and the role of the citizen in the United States and the world. This one-semester course for seniors, required by the state of Indiana, is designed to aid the student to understand and appreciate the principles of American Government and to encourage a student's personal commitment to the preservation of rights, privileges, and responsibilities of free people.

### **Economics 12**

*Economics* is a required one-semester course designed to help students understand concepts necessary for participation in a capitalist system as wage earners, business owners, producers, investors, and consumers. In this class, students have the opportunity to earn dual-credit through Ivy Tech Community College. Topics include, but are not limited to: supply and demand, competition, growth and stability, production and distribution of wealth, government role in the economy, comparison of economic systems, the effect of inflation and monetary policies on national and international economics, analysis of the local economy, and current micro-economic issues. This course will apply simulations and activities such as the Stock Market Game that require analysis and evaluation on the part of the students.

**Psychology 11-12**

*Psychology*, a one-semester course for juniors and seniors, provides students with a comprehensive examination of the basic concepts, principles, and methods central to the scientific study of psychology. This class presents an orderly discussion of psychological concepts and their application. The course is designed to meet the basic goal of enabling students to learn more about the why of their behavior. Psychology is the scientific study of man and his behavior. The central question that is being answered throughout this course is why man acts as he does.

**Sociology 11-12**

*Sociology*, a one-semester course for juniors and seniors, is the study of man and his contact with his environment and is the scientific study of group behavior. The emphasis of this class is placed on how different societies and cultures mold each individual. In this time of social change, it is intended that this class will serve as a catalyst for discussion and study among students and bring up new areas of interest. It is important for students to understand that youthful aspirations do not always translate into adult accomplishments because of social factors, but this should not prevent individuals from striving to fulfill their youthful aspirations.

**Ethnic Studies 9-12**

Ethnic Studies provides a framework to broaden students' perspectives concerning historical and contemporary lived experiences and cultural practices of ethnic and racial groups in the United States. This course may either focus on a particular ethnic or racial group or take a comparative approach across multiple groups. Course content will be presented from the perspective of the ethnic or racial group (s). This course may include an analysis of the economic, intellectual, social, and political contributions of an ethnic or racial group, as well as the socio-political and economic forces that create systemic challenges to accessing resources and opportunities.

**Indiana Studies 9-12**

Indiana Studies is an integrated course that compares and contrasts state and national developments in the areas of politics, economics, history, and culture. The course uses Indiana history as a basis for understanding current policies, practices, and state legislative procedures. It also includes the study of state and national constitutions from a historical perspective and as a current foundation of government. Examination of individual leaders and their roles in a democratic society will be included and students will examine the participation of citizens in the political process. Selections from Indiana arts and literature may also be analyzed for insights into historical events and cultural expressions.

## **TRADE AND INDUSTRIAL EDUCATION**

**Introduction to Construction 9-12**

*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 students 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 on 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. Student also investigate topics related to the purchasing and maintenance of structures, special purpose facilities, green construction and construction careers.

### **Construction Trades I 5580 (CONST TECH I)**

Construction Trades I classroom and laboratory experiences involve the formation, installation, maintenance, and repair of buildings, homes, and other structures. A history of construction, future trends and career options, reading technical drawings and transforming those drawings into physical structures are covered. 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 will be presented as well as elementary aspects of residential design and site work. 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 layout and floor construction skills. Blueprints and other professional planning documents will also be covered. 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 Safety and Health Standards for the construction industry.

- Recommended Grade Level: 11, 12
- Recommended Prerequisites: Introduction to Construction
- Credits: 2 semester course, 2 semesters required, 1-3 credits per semester, 6 credits maximum
- Counts as a Directed Elective or Elective for all diplomas

### **Construction Trades II 5578 (CONST TRA II)**

Construction Trades II builds on the formation, installation, maintenance, and repair skills learned in Construction Trades I. Information on materials, occupations, and professional organizations within the industry will be covered. Students will develop basic knowledge, skills, and awareness of interior trim and the installation of drywall, moldings, interior doors, kitchen cabinets, and baseboard moldings. Students will also develop exterior finishing competencies. The course includes instruction on the installation of cornices, windows, doors and various types of sidings currently used in industry. Studies will also focus on the design and construction of roof systems and the use of framing squares for traditional rafter and truss roofing.

- Recommended Grade Level: 12
- Required Prerequisites: Construction Trades I
- Credits: 2 semester course, 2 semesters required, 1-3 credits per semester, 6 credits maximum
- Counts as a Directed Elective or Elective for all diplomas
- Qualifies as a quantitative reasoning course.

### **Construction Trades: Electrical I 4830 (CONST ECT I)**

Construction Trades: Electrical I includes classroom and laboratory experiences focused on the installation and repair of the electrical and wiring systems of physical structures. This course includes instruction on the reading of technical drawings and their application in construction processes. Topics include the relationship between views and details, interpretation of dimension, transposing scale, tolerance, electrical symbols, sections, material lists, architectural plans, room schedules and plot plans. This course covers both AC and DC circuits. Studies include electron theory, Ohm's Law, Watt's Law, Kirchhoff's Law, series circuits, series-parallel circuits, and other electrical concepts. Students will use the underlying scientific principles related to electricity, to complete

construction projects. Mathematical principles will be used to solve electrical problems. Students will also interpret health, safety, and welfare standards and codes as dictated by local, state or federal agencies.

- Recommended Grade Level: 11, 12
- Recommended Prerequisites: Introduction to Construction
- Credits: 2 semester course, 2 semesters required, 1-3 credits per semester, 6 credits maximum
- Counts as a Directed Elective or Elective for all diplomas

(Dual Credit thru Ivy Tech as INDT 113 Basic Electricity---Ivy Tech requires at least a C in Algebra I)

### **Introduction to Manufacturing**

*Introduction to Manufacturing* is a course that 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. This understanding is 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.

### **Advanced Manufacturing I**

*Advanced Manufacturing I*, is a course that includes classroom and laboratory experiences in two broad areas: Industrial Technology/Software Controls and Manufacturing Trends. Industrial Technology and Software Controls covers wiring and schematic diagrams used to design, install, and repair electrical/electronic equipment such as wireless communication devices, programmable controllers. Course content will include basic theories of electricity, electronics, digital technology, and basic circuit analysis. Activities include experiences in: soldering; use of an oscilloscope, meters, signal generators and tracers; breadboarding; circuit simulation software; and troubleshooting. Understanding and using the underlying scientific principles related to electricity, electronics, circuits, sine waves, and Ohm's Law are integral to this course. Manufacturing Trends covers basic concepts in manufacturing operations and plant floor layout in the production environment. **Prerequisite:** Introduction to Manufacturing.

### **Advanced Manufacturing II**

*Advanced Manufacturing II*, introduces basic blueprint reading, Computer Numerical Control (CNC) operation and the skills commonly used in the manufacturing industry. Areas of study will include: interpretation of drawing dimensions and notes to ANSI standards for machining including; Geometric Dimensioning and Tolerancing (GDT), welding, fabrication applications and inspection techniques. Skills in the setup and operation of a CNC mill and lathe will also be acquired using multiple machine tool controllers. Other more general topics will include coordinate systems, dimensioning, line precedence, multiview drawings, safe dress, tool paths, speed and feed calculations, and tool selection. **Prerequisite:** Advanced Manufacturing I

### **Introduction to Engineering Design 9-12**

*Intro to Engineering Design* teaches problem-solving skills that use a design development process. The models of product solutions are created, analyzed, and communicated using solid modeling computer design software. Students will be exposed to the latest software and equipment used by industry, colleges and universities that specialize in engineering.

### **Principles of Engineering 10-12**

*Principles of Engineering* helps students understand the field of engineering/engineering technology. It explores various technology systems and manufacturing processes, which helps students learn how engineers and technicians use math, science and technology in an engineering problem solving process. This course also includes concerns about social and political consequences of technological change. **Prerequisite:** Introduction to Engineering Design.

### **Digital Electronics** 10-12

*Digital Electronics* is a course in applied logic that encompasses the application of electronic circuits and devices. Computer simulation software is used to design and test digital circuitry prior to the actual construction of circuits and devices. This class will be used to calculate a weighted GPA. **Prerequisites:** Introduction to Engineering Design

## **WORLD LANGUAGES**

### **German I** 9-12

In *German I*, the students are introduced to basic German conversational situations that they might experience in daily life in Germany. Basic grammar and sentence structure, as well as geography and culture are introduced at level one. Reading, writing basic German, and speaking in the target language will be mastered with special attention to oral proficiency. It is recommended that students have a “C” or better in their previous English class.

### **German II** 10-12

German II students will develop their written and oral proficiency to build more complex dialogues and texts. Through a combination of listening, speaking, reading, and writing assignments, students will expand their ability to communicate about a variety of topics. Students will continue to learn about geography, culture and history throughout the year. Prerequisite: students should have a “C” or higher in the previous language class or be given permission by the teacher.

### **German III/CAP GERM 203** 11-12

In German III, students will have the opportunity to earn college credit through USI’s CAP program. After applying for admittance into the program and paying a \$75 fee, students will earn three dual credit hours for German 203. These credits are transferable to other institutions. In this course, students are expected to speak in German frequently, and students should also expect instruction to be delivered in German a majority of the time. Assessments will include a variety of oral and written vocabulary quizzes, summative chapter tests, oral and written projects, and more complex reading passages. This course focuses on oral proficiency, reading and listening comprehension, and complex grammatical structures.

Prerequisites: Students must have a “C” or higher in previous language or be given permission by the teacher.

### **German IV/CAP GERM 204** 12

In German IV, students will also have the opportunity to earn college credit through USI’s CAP program. After paying a \$75 fee, students will earn three dual credit hours for German 204. These credits are transferable to other institutions. In this course, students are expected to speak almost exclusively German, and with the exception of grammar lessons, instruction will be delivered solely in German. Assessments will include a variety of oral and written vocabulary quizzes, summative chapter tests, oral and written projects, and complex reading passages. This course focuses on oral proficiency, reading and listening comprehension, and complex grammatical structures.

Prerequisite: Students must have a “C” or better in the previous level or be given permission by the teacher.

**Spanish I 9-12**

*Spanish I* is a general introduction to the pronunciation, basic grammatical structures and vocabulary of the language to develop listening, speaking, reading and writing skills. The culture of the Spanish speaking countries is also emphasized. **Prerequisite:** Students must have a “C” or better in the previous English class or be given permission by the teacher.

**Spanish II 10-12**

*Spanish II* reviews level 1 work. Spanish II concentrates on the master of syntax, the expansion of vocabulary and reading and writing skills. Students in Spanish II continue to learn about the culture of the Spanish speaking countries. **Prerequisite:** Students must have a “C” or better in the previous language or be given permission by the teacher.

**Spanish III 11-12**

*Spanish III* is designed to review and reinforce all concepts learned in Spanish I and II. In speaking and writing students are given the opportunity to express original ideas. Vocabulary is expanded through individual interests. The emphasis is on Spanish literature and culture. Specific interests of the students are also incorporated into this course. **Prerequisite:** Students must have a “C” or better in the previous language or be given permission by the teacher.

**Cadet Teaching - Spanish IV 12**

Students who have completed 3 years of Spanish are eligible to apply to be a Spanish cadet teacher. Student will work independently to create lesson plans for a 3<sup>rd</sup> grade classroom and utilize the plans in an actual classroom at one of the feeder schools. Students are required to provide transportation to the elementary school. **Prerequisite:** Students must have a “C” or better in the previous language or be given permission by the teacher. Application and interview required.