

North Lawrence Career Center

Course Descriptions 2022-2023

AGRICULTURE

7117 Principles of Agriculture

Principles of Agriculture is a two-semester course that will cover the diversity of the agricultural industry and agribusiness concepts. Students will develop an understanding of the role of agriculture in the United States and globally. Students will explore Agriculture, Food, and Natural Resource (AFNR) systems related to the production of food, fiber, and fuel and the associated health, safety, and environmental management systems. Topics covered in the course range from animals, plants, food, natural resources, ag power, structures and technology, and agribusiness.

5008 Animal Science

Animal Science is a two-semester course that provides students with an overview of the animal agriculture industry. Students participate in a large variety of activities and laboratory work including real and simulated animal science experiences and projects. All areas that the student's study may be applied to both large and small animals. Topics to be covered in the course include history and trends in animal agriculture, laws and practices relating to animal agriculture, comparative anatomy and physiology of animals, biosecurity threats and interventions relating to animal and human safety, nutrition, reproduction, careers, leadership, and supervised agricultural experiences relating to animal agriculture.

- Required Prerequisites: Principles of Agriculture
- Fulfills a science course requirement for all diplomas
- Fulfills a physical science requirement for General Diploma

5070 Advanced Life Science, Animals (L)

Advanced Life Science: Animals is a two-semester course that provides students with opportunities to participate in a variety of activities including laboratory work. Students will explore concepts related to history and trends in animal agriculture as related to animal welfare, husbandry, diseases and parasites, laws and practices relating to the handling, housing, environmental impact, global sustainable practices of animal agriculture, genetics, breeding practices, biotechnology uses, and comparative knowledge of anatomy and physiology of animals used in animal agriculture.

- Required Prerequisites: Principles of Agriculture or Principles of Veterinary Science
- Fulfills a science requirement for all diplomas.
- Qualifies as a quantitative reasoning course

7280 Principles of Veterinary Science

Principles of Veterinary Science is a two-semester course that provides students with an overview of the small and large animal veterinary industry which includes companion, food, and exotic animals. Principles of Veterinary Science will cover skills common to specific veterinary career topics such as animal care, veterinary assistant, veterinary technician, and veterinarian. Students will learn foundational veterinary knowledge for large and small animals which includes practical lab skills and common office practices.

5132 Horticultural Science

Horticulture Science is a two-semester course that provides students with a background in the field of horticulture. Coursework includes hands-on activities that encourage students to investigate areas of horticulture as it relates to the biology and technology involved in the production, processing, and marketing of horticultural plants and products. Students are introduced 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.

- Required Prerequisites: Principles of Agriculture
- Fulfills a Life Science or Physical Science requirement for the General Diploma

7115 Landscape & Turf Management

Landscape and Turf Management is a two-semester course that provides the student with an overview of the many career opportunities in the diverse field of landscape and turf management. Students are introduced to the procedures used in the planning and design of a landscape using current technology practices, the principles and procedures involved with landscape construction, the determination of maintenance schedules, communications, and management skills necessary in landscaping operations, and the care and use of equipment utilized by landscapers. Upon completion of the program, students have the opportunity to become Indiana Landscape Industry Certified through a state-approved program.

- Required Prerequisites: Principles of Agriculture

ARTS, AV TECH, & COMMUNICATION

4790 Introduction to Communications

Introduction to Communications is a course designed to provide foundational knowledge of identifying and using modern communication to exchange messages and information. This course explores the application of the tools, materials, and techniques used to design, produce, use, and assess systems of communication. Students will produce graphic and electronic media as they apply communication technologies. This course will also explore the various technical processes used to link ideas and people through the use of electronic and graphic media. Major goals of this course include an overview of communication technology; the way it has evolved, how messages are designed and produced, and how people may profit from creating information services and products. Students will explore mass media communication processes including radio and television broadcasting, publishing and printing activities, telecommunication networks, recording services, computer and data processing networks, and other related systems. Students will use the design process to solve design projects in each communication area.

Graphics

Students will sign up for all 3 in one year:

1. 7140 Principles of Digital Design

Principles of Digital Design 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, critical peer evaluation, and presentation skills. Students will have the opportunity to apply the design theory through an understanding of basic photographic theory and technique. Topics will include image capture, processing, various output methods, and light.

2. 7141 Digital Design Graphics

Principles of Digital Design 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, critical peer evaluation, and presentation skills. Students will have the opportunity to apply the design theory through an understanding of basic photographic theory and technique. Topics will include image capture, processing, various output methods, and light.

- Required Prerequisites: Principles of Digital Design

3. **5550 Graphic Design & Layout**

Graphic Design and Layout teaches design process and the proper and creative use of type as a means to develop effective communications for global, corporate and social application. Students will create samples for a portfolio, which may include elements or comprehensive projects in logo, stationery, posters, newspaper, magazine, billboard, and interface design.

- Required Prerequisites: Principles of Digital Design; Digital Design Graphics

Radio & TV

Students will sign up for all 3 in one year:

1. **7139 Principles of Broadcasting**

The purpose of the Principles of Broadcasting course is to provide entry-level fundamental skills for students who wish to seek or pursue opportunities in the field of broadcasting or mass media. Students will explore the technical aspects of audio and sound design for radio production and distribution, as well as, the technical aspects of video production and distribution.

2. **7306 Audio & Video Production Essentials**

Audio and Video Production Essentials provides an in-depth study on audio and video production techniques for radio, television, and digital technologies. Students will learn skills necessary for audio production and on-air work used in radio and other digital formats. Additionally, the experience will be gained in the development of the video production process; including skills in message development, directing, camera, video switcher, and character generator operations.

- Required Prerequisites: Principles of Broadcasting

3. **7307 Mass Media Production**

Mass Media Production will focus on the study of theory and practice in the voice and visual aspects of radio and television performance. In addition, this course introduces the skills used to acquire and deliver news stories in a digital media format. Students will learn how to research issues and events, interview news sources, interact with law enforcement and government officials, along with learning to write in a comprehensive news style.

- Required Prerequisites: Principles of Broadcasting; Audio and Video Production Essentials

6462 Radio & Television 2

Radio and Television 2 prepares students for admission to television production programs at institutions of higher learning. Students train on professional equipment creating a variety of video projects. During this second-year program, students integrate and build on the first-year curriculum while mastering advanced concepts in production, lighting, and audio.

- Required Prerequisites: Radio and Television 1 (Principles of Broadcasting, Audio & Video Production Essentials, and Mass Media Production)

BUSINESS MANAGEMENT

4562 Principles of Business Management

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.

7143 Management Fundamentals

Management Fundamentals describe 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. Examines legal aspects of property ownership, structures of business ownership, and agency relationships.

- Required Prerequisites: Principles of Business Management

4524 Accounting Fundamentals

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.

- Required Prerequisites: Principles of Business Management

CONSTRUCTION

650 Introduction to Construction (DOE# 4792)

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 the 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, drywalling, 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.

CONSTRUCTION TRADES 1:

*Students will sign up for all three in one year: Principles of Construction Trades, Construction Trades: General Carpentry, and Construction Trades: Framing and Finishing in order to fulfill Construction Trades 1.

1. **7130 Principles of Construction Trades**

Principles of Construction Trades prepares students with the basic skills needed to continue in a construction trade field. Topics will include an introduction to the types and use for common hand and power tools, learning the types and basic terminology associated with construction drawings, and basic safety. Additionally, students will study the roles of individuals and companies within the construction industry and reinforce the mathematical and communication skills necessary to be successful in the construction field.

2. 7123 Construction Trades: General Carpentry

Construction Trades: General Carpentry builds upon the skills learned in the Principles of Construction Trades and examines the basics of framing. This includes studying the procedures for laying out and constructing floor systems, wall systems, ceiling joist and roof framing, and basic stair layout. Additionally, students will be introduced to building envelope systems.

- Required Prerequisites: Principles of Construction Trades

3. 7122 Construction Trades: Framing and Finishing

Construction Trades: Framing and Finishing prepares students with advanced framing skills along with interior and exterior finishing techniques. Topics include roofing applications, thermal and moisture protection, exterior finishing, cold-formed steel framing, drywall installation, and finishing, doors, and door hardware, suspended ceilings, window, door, floor, and ceiling trim, and cabinet installation.

- Required Prerequisites: Principles of Construction Trades and Construction Trades: General Carpentry

CONSTRUCTION TRADES 2:

7242 Construction Trades Capstone

The Construction Trades Capstone course covers the basics of electricity and working with concrete. Electrical topics include the National Electric Code, electrical safety, electrical circuits, basic electrical construction drawings, and residential electrical services. Students may also gain an understanding of concrete properties, foundations, slab-on-grades, and vertical and horizontal formwork. The course prepares students for the NCCER Carpentry Forms Level 3 and Electrical Level 1 certificates.

- Required Prerequisites: Construction Trades 1 (Principles of Construction Trades, Construction Trades: General Carpentry, and Construction Trades: Framing and Finishing)

Criminal Justice

CRIMINAL JUSTICE 1:

*Students will sign up for all three in one year: Principles of Criminal Justice, Law Enforcement Fundamentals, and Corrections & Cultural Awareness in one year in order to fulfill Criminal Justice 1.

1. 7193 Principles of Criminal Justice

Principles of Criminal Justice covers the purposes, functions, and history of the three primary parts of the criminal justice system: law enforcement, courts, and corrections. This course further explores the interrelationships and responsibilities of these three primary elements of the criminal justice system.

2. 7191 Law Enforcement Fundamentals

Law Enforcement Fundamentals Critically examines the history and nature of the major theoretical perspectives in criminology, and the theories found within those perspectives. Analyzes the research support for such theories and perspectives, and the connections between theory and criminal justice system practice within all the major components of the criminal justice system. Demonstrates the application of specific theories to explain violent and non-violent criminal behavior on both the micro and macro levels of analysis. Additionally, this course will introduce fundamental law enforcement operations and organizations. This includes the evolution of law enforcement at federal, state, and local levels.

- Required Prerequisites: Principles of Criminal Justice

3. 7188 Corrections and Cultural Awareness

Corrections and Cultural Awareness emphasizes the study of American criminal justice problems and systems in historical and cultural perspectives, as well as discussing social and public policy factors affecting crime. Multidisciplinary and multicultural perspectives are stressed. Additionally, this course takes a further examination of the American correctional system; the study of administration of local, state, and federal correctional agencies. The examination also includes the history and development of correctional policies and practices, criminal sentencing, jails, prisons, alternative sentencing, prisoner rights, rehabilitation, and community corrections including probation and parole. Current philosophies of corrections and the debates surrounding the roles and effectiveness of criminal sentences, institutional procedures, technological developments, and special populations are discussed.

- Required Prerequisites: Principles of Criminal Justice; Law Enforcement Fundamentals

CRIMINAL JUSTICE 2:

5824 Criminal Justice 2

Criminal Justice 2 introduces students to concepts and practices in traffic control as well as the forensic investigation at crime scenes. Students will have opportunities to use mathematical skills in crash reconstruction and analysis activities requiring measurements and performance of speed/acceleration calculations. Additional activities simulating criminal investigations will be used to teach scientific knowledge related to anatomy, biology, and chemistry as well as a collection of evidence, developing and questioning suspects, and protecting the integrity of physical evidence found at the scene and while in transit to a forensic science laboratory. Procedures for the use and control of informants, inquiries keyed to basic leads, and other information gathering activities and chain of custody procedures will also be reviewed. Current trends in criminal justice and law enforcement will also be covered.

- Prerequisites: Criminal Justice 1 (Principles of Criminal Justice, Law Enforcement Fundamentals, and Corrections & Cultural Awareness)

EDUCATION & TRAINING

Early Childhood Education

EARLY CHILDHOOD EDUCATION 1:

*Students will sign up for all three:: Principles of Early Childhood Education, Early Childhood Education Curriculum, and Early Childhood Education Guidance in one year in order to fulfill Early Childhood Education 1.

1.) 7160 Principles of Early Childhood Education

This course provides students with an overview of the skills and strategies necessary to successfully complete a certificate. Additionally, it provides an overview of the history, theory, and foundations of early childhood education as well as exposure to types of programs, curricula, and services available to young children. This course also examines basic principles of child development, Developmentally Appropriate Practices (DAP), the importance of family, licensing, and elements of quality care of young children with an emphasis on the learning environment related to health, safety, and nutrition. Students may be required to complete observations and field experiences with children as related to this course.

2.) 7159 Early Childhood Education Guidance

This course allows students to analyze developmentally appropriate guidance, theory, and implementation for various early care and education settings. It also provides a basic understanding of the anti-bias/multicultural emphasis in the field of early childhood. Students may be required to complete observations and field experiences with children as related to this course.

- Required Prerequisites: Principles of Early Childhood Education

3.) 7158 Early Childhood Education Curriculum

Early Childhood Education Curriculum examines developmentally appropriate environments and activities in various childcare settings while exploring the varying developmental levels and cultural backgrounds of children. Students may be required to complete observations and field experiences with children as related to this course.

- Required Prerequisites: Principles of Early Childhood Education

EARLY CHILDHOOD EDUCATION 2:

7259 Early Childhood Education Capstone

This course will prepare students to complete the application, CDA exam, and verification process for the Child Development Associate (CDA) credential. Students may also study the physical, social, emotional, cognitive, and moral development of children from conception to age twelve. Theories of child development, biological and environmental foundations, prenatal development, the birth process, and the newborn baby will be discussed. Additionally, students will explore the aspects of early literacy skill development in young children from birth through third grade. Students will explore techniques, technological tools, and other learning opportunities that encourage positive attitudes in children regarding listening, speaking, reading and writing activities. In the course, students will research, examine and explore the use of observation in screening and assessment to promote health literacy development in early childhood education. Finally, students will be provided an introduction to caring for each exceptional child. This includes theories and practices for producing optimal developmental growth. Students may be required to complete observations and field experiences with children as related to this course.

- Required Prerequisites: Early Childhood Education 1 (Principles of Early Childhood Education; Early Childhood Education Curriculum; Early Childhood Education Guidance)

Education Professions

Students will sign up for all 3 in one year:

1. 7161 Principles of Teaching

This course provides a general introduction to the field of teaching. Students will explore educational careers, teaching preparation, and professional expectations as well as requirements for teacher certification. Current trends and issues in education will be examined. A minimum 20-hour classroom observation experience is required for successful completion of this course.

2. 7157 Child & Adolescent Development

Child and Adolescent Development examine the physical, social, emotional, cognitive, and moral development of the child from birth through adolescence with a focus on the middle years through adolescence. Basic theories of child development, biological and environmental foundations of development, and the study of children through observation and interviewing techniques are explored. The influence of parents, peers, the school environment, culture and the media are discussed. An observation experience up to 20 hours may be required for completion of this course. This course has been approved to be offered for dual credit. Students pursuing this course for dual credit are still required to meet the minimum prerequisites for the course and pass the course with a C or better in order for dual credit to be awarded.

- Required Prerequisites: Principles of Teaching

3. 7162 Teaching & Learning

Teaching and Learning provide students the opportunity to apply many of the concepts that they have learned throughout the Education Professions pathway. In addition to a focus on best practices, this course will provide an introduction to the role that technology plays in the modern classroom. Through hands-on experience with educational software, utility packages, and commonly used microcomputer hardware, students will analyze ways to integrate technology as a tool for instruction, evaluation, and management.

- Required Prerequisites: Principles of Teaching

ENGINEERING -- PLTW (STEM)

4802 Introduction to Engineering Design (Year 1)

Introduction to Engineering Design is a fundamental pre-engineering course where students become familiar with the engineering design process. Students work both individually and in teams to design solutions to a variety of problems using industry-standard sketches and current 3D design and modeling software to represent and communicate solutions. Students apply their knowledge through hands-on projects and document their work with the use of an engineering notebook. Students begin with completing structured activities and move to solve open-ended projects and problems that require them to develop planning, documentation, communication, and other professional skills. Ethical issues related to professional practice and product development are also presented.

5644 Principles of Engineering (Year 2)

Principles of Engineering is a course that focuses on the process of applying engineering, technological, scientific, and mathematical principles in the design, production, and operation of products, structures, and systems. This is a hands-on course 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. Schools may use the PLTW curriculum to meet the standards for this course.

- Required Prerequisites: Introduction to Engineering Design
- Fulfills a science course requirement for all diplomas
- Qualifies as a quantitative reasoning course

5650 Civil Engineering and Architecture (Year 3 or 4)

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 should allow students opportunities to design, simulate, and evaluate the construction of buildings and communities. During the planning and design phases, instructional emphasis should be placed on related transportation, water resources, and

environmental issues. Activities should include the preparation of cost estimates as well as a review of regulatory procedures that would affect the project design

- Required Prerequisites: Introduction to Engineering Design
- Qualifies as a quantitative reasoning course

5538 Digital Electronics (Year 3 or 4)

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

- Required Prerequisites: Introduction to Engineering Design or Principles of Engineering
- Qualifies as a quantitative reasoning course

5534 Computer Integrated Manufacturing (Year 3 or 4)

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

- Required Prerequisites: Introduction to Engineering Design
- Qualifies as a quantitative reasoning course

FAMILY & CONSUMER SCIENCES (FACS)

***The health education credit may be waived for a student if the student's program includes three (3) credits from the following Family & Consumer Sciences courses: (A) Child Development, (B) Human Development and Wellness, (C) Interpersonal Relationships, (D) Nutrition and Wellness, (E) Preparing for College & Careers, or Adult Roles and Responsibilities**

5342 Nutrition and Wellness

Nutrition and Wellness is an introductory course valuable for all students as a life foundation and academic enrichment; it is especially relevant for students interested in careers related to nutrition, food, and wellness. This is a nutrition class that introduces students to only the basics of food preparation so they can become self-sufficient in accessing healthy and nutritious foods. Major course topics include nutrition principles and applications; influences on nutrition and wellness; food preparation, safety, and sanitation; and science, technology, and careers in nutrition and wellness. A project-based approach that utilizes higher-order thinking, communication, leadership, management processes, and fundamentals to college and career success is recommended in order to integrate these topics into the study of nutrition, food, and wellness. Food preparation experiences are a required component. Direct, concrete mathematics and language arts proficiencies will be applied. This course is the first in a sequence of courses that provide a foundation for continuing and post-secondary education in all career areas related to nutrition, food, and wellness

- Qualifies as one of the FACS courses a student can take to waive the Health & Wellness graduation requirement

5438 Introduction to Culinary Arts and Hospitality

Introduction to Culinary Arts and Hospitality is recommended for all students regardless of their career cluster or pathway, in order to build basic culinary arts knowledge and skills. It is especially appropriate for students with an interest in careers related to Hospitality, Tourism, and Culinary Arts. A project-based approach that utilizes higher-order thinking, communication, leadership, and management processes is recommended. Topics include basic culinary skills in the foodservice industry, safety and sanitation, nutrition, customer relations, and career investigation. Students 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.

5364 Interpersonal Relationships

Interpersonal Relationships is an introductory course that is especially relevant for students interested in careers that involve interacting with people. It is also valuable for all students as a life foundation and academic enrichment. This course addresses knowledge and skills needed

for positive and productive relationships in career, community, and family settings. Major course topics include communication skills; leadership, teamwork, and collaboration; conflict prevention, resolution, and management; building and maintaining relationships; and individual needs and characteristics and their impacts on relationships. A project-based approach that utilizes higher-order thinking, communication, leadership, management processes, and fundamentals to college and career success is recommended in order to integrate these topics into the study of interpersonal relationships. Direct, concrete language arts proficiencies will be applied. Service-learning and other authentic applications are strongly recommended. This course provides a foundation for continuing and post-secondary education for all career areas that involve interacting with people both inside and outside of a business/organization, including team members, clients, patients, customers, and the general public.

- Qualifies as one of the FACS courses a student can take to waive the Health & Wellness graduation requirement

5330 Adult Roles and Responsibilities

Adult Roles and Responsibilities is recommended for all students as life foundations and academic enrichment, and as a career sequence course for students with interest in family and community services, personal and family finance, and similar areas. This course builds knowledge, skills, attitudes, and behaviors that students will need as they complete high school and prepare to take the next steps toward adulthood in today's society. The course includes the study of interpersonal standards, lifespan roles and responsibilities, individual and family resource management, and financial responsibility and resources. A project-based approach that utilizes higher-order thinking, communication, leadership, management processes, and fundamentals to college and career success is recommended in order to integrate these topics into the study of adult roles and responsibilities. Direct, concrete mathematics and language arts proficiencies will be applied. Service-learning and other authentic applications are strongly recommended. This course provides the foundation for continuing and post-secondary education in all career areas related to individual and family life.

- Qualifies as one of the FACS courses a student can take to waive the Health & Wellness graduation requirement

5366 Human Development and Wellness

Human Development and Wellness is valuable for all students as a life foundation and academic enrichment; it is especially relevant for students interested in careers impacted by individuals' physical, social, emotional, and moral development and wellness across the lifespan. Major topics include principles of human development and wellness; impacts of family on human development and wellness; factors that affect human development and wellness;

practices that promote human development and wellness; managing resources and services related to human development and wellness; and career exploration in human development and wellness. Life events and contemporary issues addressed in this course include (but are not limited to) change; stress; abuse; personal safety; and relationships among lifestyle choices, health and wellness conditions, and diseases. A project-based approach that utilizes 294 Indiana Department of Education 2021-2022 High School Course Titles and Descriptions higher-order thinking, communication, leadership, and management processes is recommended in order to integrate the study of these topics. Authentic applications through service learning are encouraged.

- Qualifies as one of the FACS courses a student can take to waive the Health & Wellness graduation requirement

5362 Child Development

Child Development is an introductory course for all students as a life foundation and academic enrichment; it is especially relevant for students interested in careers that draw on knowledge of children, child development, and nurturing of children. This course addresses issues of child development from conception/prenatal through age 3. It includes the study of prenatal development and birth; growth and development of children; child caregiving and nurturing; and support systems for parents and caregivers. A project-based approach that utilizes higher-order thinking, communication, leadership, management processes, and fundamentals to college and career success is recommended in order to integrate these topics into the study of child development. Direct, concrete mathematics and language arts proficiencies will be applied. Authentic applications such as introductory laboratory/field experiences with young children and/or service-learning that build knowledge of children, child development, and nurturing of children are strongly recommended. This course provides the foundation for continuing and post-secondary education in all career areas related to children, child development, and nurturing of children

5360 Advanced Child Development

Advanced Child Development is for those students interested in life foundations, academic enrichment, and/or careers related to knowledge of children, child development, and nurturing of children. This course addresses issues of child development from ages four through age eight (grade three). It builds on the Child Development course, which is a prerequisite. Advanced Child Development 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; teaching and guiding children; special conditions affecting children; and career exploration in child development and nurturing. A project-based approach that utilizes higher-order thinking, communication, leadership, management, and fundamentals to college

and career success is recommended in order to integrate these topics into the study of child development. Direct, concrete mathematics and language arts proficiencies will be applied.

- Recommended Prerequisites: Child Development

HEALTH CAREERS

Health Sciences

HEALTH SCIENCE EDUCATION 1:

*Students will sign up for all three: Principles of Healthcare, Medical Terminology, and Certified Clinical Medical Assistant in one year in order to fulfill Health Science Education 1.

1. 7168 Principles of Healthcare

Principles of Healthcare content includes skills common to specific health career topics such as patient nursing care, dental care, animal care, medical laboratory, public health, and an introduction to healthcare systems. Lab experiences are organized and planned around the activities associated with the student's career objectives.

2. 5274 Medical Terminology

Medical Terminology prepares students with language skills necessary for effective, independent use of health and medical reference materials. It includes the study of health and medical abbreviations, symbols, and Greek and Latin word part meanings, all taught within the context of body systems. This course builds skills in pronouncing, spelling, and defining new words encountered in verbal and written information in the healthcare industry. Students have the opportunity to acquire essential skills for accurate and logical communication, and interpretation of medical records. Emphasis is on forming a foundation of a medical vocabulary including; appropriate and accurate meaning, spelling, and pronunciation of medical terms, and abbreviations, signs, and symbols.

3. 7164 Certified Clinical Medical Assistant (CCMA)

The Certified Clinical Medical Assistant course will prepare students for the National Healthcare Association CCMA exam. 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.

- Required Prerequisites: Principles of Healthcare; Medical Terminology

HEALTH SCIENCE EDUCATION 2:

6842 Health Science Education 2: Nursing

Health Science Education II: Nursing is an extended laboratory experience designed to provide students with the opportunity to assume the role of a nurse assistant. Students have the opportunity to learn, and then to practice those technical skills previously learned in the classroom at qualified clinical sites while under the direction of licensed nurses. These sites may include extended care facilities, hospitals, and home health agencies. Throughout the course, students will focus on learning about the healthcare system and employment opportunities at a variety of entry levels of the healthcare field; an overview of the healthcare delivery systems, healthcare teams, and legal and ethical considerations; and obtaining the knowledge, skills, and attitudes essential for providing basic care in a variety of healthcare settings. Additionally, students will build their essential job related skills such as providing appropriate personal care to patients; reporting necessary information to nurse staff; operating and monitoring medical equipment; teaching and assisting patients and families with the management of their illness or injury; and performing general health screenings. This course provides students with the knowledge, attitudes, and skills needed to make the transition from high school, to post-secondary opportunities, and to work in a variety of health science careers. Students are encouraged to focus on self-analysis to aid in their career selection. Job seeking and job maintenance skills, personal management skills, and completion of the application process for admission into a post-secondary program are also areas of focus. Participation in HOSA encourages the development of leadership, communication and career-related skills, and opportunities for community service.

- Recommended Prerequisites: Health Science Education 1

Biomedical Sciences

5218 Principles of Biomedical Sciences (Year 1)

Principles of the 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.

- Required Prerequisites: Biology 1 or concurrent enrollment in Biology 1
- Fulfills a science requirement for all diplomas

5216 Human Body Systems (Year 2)

Human Body Systems is a course designed to engage students in the study of basic human physiology and the care and maintenance required to support complex systems. Using a focus on human health, students will employ a variety of monitors to examine body systems (respiratory, circulatory, and nervous) at rest and under stress, and observe the interactions between the various body systems. Students will use appropriate software to design and build systems to monitor body functions.

- Required Prerequisites: Principles of Biomedical Sciences
- Fulfills a science requirement for all diplomas

5217 Medical Interventions (Year 3)

Medical Interventions is a course that studies medical practices including interventions to support humans in treating disease and maintaining health. Using a project-based learning approach, students will investigate various medical interventions that extend and improve quality of life, including gene therapy, pharmacology, surgery, prosthetics, rehabilitation, and supportive care. Students will also study the design and development of various interventions. Lessons will cover the history of organ transplants and gene therapy with additional readings from current scientific literature addressing cutting-edge developments.

- Required Prerequisites: Principles of Biomedical Sciences
- Fulfills a science requirement for all diplomas

INFORMATION TECHNOLOGY

7183 Principles of Computing

Principles of Computing provides students the opportunity to explore how computers can be used in a wide variety of settings. The course will begin by exploring trends of computing and the necessary skills to implement information systems. Topics include operating systems, database technology, cybersecurity, cloud implementations, and other concepts associated with applying the principles of good information management to the organization. Students will also have the opportunity to utilize basic programming skills to develop scripts designed to solve problems. Students will learn about algorithms, logic development, and flowcharting.

7179 Cybersecurity Fundamentals

This course introduces fundamental networking protocols and their hierarchical relationship in the context of conceptual Information Communication Technology (ICT) frameworks. Students will learn how networked hosts and applications communicate across networks. Emphasis is placed on security throughout the entire SDLC (Systems Development Life Cycle).

- Required Prerequisites: Principles of Computing

7178 Advanced Cybersecurity

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, e-mail 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.

- Required Prerequisites: Principles of Computing; Cybersecurity Fundamentals

5230 Computer Repair & Maintenance (CRAM)

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.

678 Computer Science 1 (DOE# 4801) (The T in STEM)

Computer Science 1 introduces the structured techniques necessary for the efficient solution of business-related computer programming logic problems and coding solutions into a high-level language. 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 program flowcharting, pseudo coding, and hierarchy charts as a means of solving problems. The course covers creating file layouts, print charts, program narratives, user documentation, and system flowcharts for business problems; algorithm development and review, flowcharting, input/output techniques, looping, modules, selection structures, file handling, control breaks, and offers students an opportunity to apply skills in a laboratory environment.

- Fulfills a science course requirement for all diplomas
- Qualifies as a quantitative reasoning course

670 Computer Science 2 (DOE# 5236) (The T in STEM)

Computer Science 2 explores and builds skills in programming and a basic understanding of the fundamentals of procedural program development using structured modular concepts. 67 Indiana Department of Education High School Course Titles and Descriptions Coursework 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, and data file access methods. An emphasis on logical program design using a modular approach, which involves task-oriented program functions.

- Required Prerequisites: Computer Science 1
- Fulfills a science course requirement for all diplomas
- Qualifies as a quantitative reasoning course

MANUFACTURING

Precision Machining

4796 Introduction to Trades

Introduction to Trades focuses on manufacturing systems with an introduction to advanced manufacturing and logistics and their relationship to society, individuals, and the environment. Students 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 investigate the properties of engineered materials. Students study six major types of material processes: casting and molding; forming; separating; conditioning; finishing; and assembling. After gaining a working knowledge of these materials, students are introduced to advanced manufacturing, logistics, and business principles that are utilized in today's advanced manufacturing industry. Students gain a basic understanding of tooling, electrical skills, operation skills, inventory principles, MSDS's, chart and graph reading and MSSC concepts. There is also an emphasis placed on the flow process principles, material movement, safety, and related business operations. Students have the opportunity to develop the characteristics employers seek as well as skills that will help them in future endeavors.

PRECISION MACHINING 1

*Students will sign up for all three in one year: Principles of Precision Machining, Precision Machining Fundamentals, and Advanced Precision Machining in order to fulfill Precision Machining 1.

1. 7109 Principles of Precision Machining

Principles of Precision Machining will provide students with a basic understanding of the processes used to produce industrial goods. Classroom instruction and labs will focus on shop safety, measurement, layout, blueprint reading, shop math, metallurgy, basic hand tools, milling, turning, grinding, and sawing operations. This course prepares the student for the optional National Institute for Metalworking Skills (NIMS) Measurement, Materials, & Safety certification that may be required for college dual credit.

2. 7105 Precision Machining Fundamentals

Precision Machining Fundamentals will build a foundation in conventional milling and turning. Students will be instructed in the classroom on topics of shop safety, theory, industrial terminology, and calculations. Lab work will consist of the setup and operation of vertical and/or horizontal milling machines and engine lathes. This course prepares the student for the optional National Institute for Metalworking Skills (NIMS) Milling I certification that may be required for college dual credit.

- Required Prerequisites: Principles of Precision Machining
- Qualifies as a quantitative reasoning course

3. **7107 Advanced Precision Machining**

Advanced Precision Machining will build upon the Turning and Milling processes learned in Precision Machining Fundamentals and will build a foundation in abrasive process machines. Students will be instructed in the classroom on topics of shop safety, theory, industrial terminology, and calculations associated with abrasives. Lab work will consist of the setup and operation of bench grinders and surface grinders. Additionally, students will be introduced to Computerized Numeric Controlled (CNC) setup, operations, and programming. This course prepares the student for the optional National Institute for Metalworking Skills (NIMS) Grinding I certification that may be required for college dual credit.

- Required Prerequisites: Principles of Precision Machining and Precision Machining Fundamentals
- Qualifies as a quantitative reasoning course

PRECISION MACHINING 2:

7219 Precision Machining Capstone

Precision Machining Capstone is an in-depth study of skills learned in Precision Machining I, with a stronger focus on CNC setup/operation/programming. Students will be introduced to two-axis CNC lathe programming and three-axis CNC milling machine programming. Develops the theory of programming in the classroom with applications of the program accomplished on industry-type machines. Studies terminology of coordinates, cutter paths, angle cutting, and linear and circular interpolation. 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 presented.

- Required Prerequisites: Principles of Precision Machining, Precision Machining Fundamentals, and Advanced Precision Machining
- Qualifies as a quantitative reasoning course

Welding Technology

WELDING 1:

*Students will sign up for all three in one year: Principles of Welding Technology, Shielded Metal Arc Welding, and Gas Welding Processes in order to fulfill Welding Technology 1.

1. **7110 Principles of Welding Technology**

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

2. 7111 Shielded Metal Arc Welding

Shielded Metal Arc Welding involves the theory and application of the Shielded Metal Arc Welding process. Process theory will include basic electricity, power sources, electrode selection, and all aspects pertaining to equipment operation and maintenance. Laboratory welds will be performed in basic weld joints with a variety of electrodes in the flat, horizontal and vertical positions. Emphasis will be placed on developing the basic skills necessary to comply with AWS industry standards.

- Required Prerequisites: Principles of Welding Technology

3. 7101 Gas Welding Processes

Gas Welding Processes is designed to cover the operation of Gas Metal Arc Welding (MIG) equipment. This will include all settings, adjustments, and maintenance needed to weld with a wire feed system. Instruction on both short-arc and spray-arc transfer methods will be covered. Tee, lap, and open groove joints will be done in all positions with solid, flux core, and aluminum wire. Test plates will be made for progress evaluation. Schools may choose to offer the course as a comprehensive MIG Welding course or a combination of introductory MIG and TIG Welding operations.

- Required Prerequisites: Principles of Welding Technology

WELDING 2:

7226 Welding Technology Capstone

The Welding Technology Capstone course builds upon the knowledge and skills developed in Welding Fundamentals, Shielded Metal Arc Welding, and Gas Metal Arc Welding by developing advanced welding skills in Gas Tungsten Arc Welding (TIG), Pipe Welding, and Fabrication. As a capstone course, students should have the opportunity to apply their knowledge and use skills through an intensive work-based learning experience.

- Required Prerequisites: Welding Technology 1 (Principles of Welding Technology, Shielded Metal Arc Welding, and Gas Welding Processes)

TRANSPORTATION

4798 Introduction to Transportation

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 the 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 as it relates to the transportation industries. The 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.

Automotive Collision Repair

AUTOMOTIVE COLLISION REPAIR 1:

*Students will sign up for all three in one year: Principles of Collision Repair, Automotive Paint and Welding, and Automotive Body Repair in order to fulfill Automotive Collision Repair 1.

1. 7215 Principles of Collision Repair

Principles of Collision Repair provides students an overview of the operating, electrical, and general maintenance systems of the modern automobile. Students will be introduced to the safety and operation of equipment and tools used in the automotive collision industry. Students will study the basics of collision repair, along with learning to perform basic service and maintenance, including the car's starting and charging system.

2. 7204 Automotive Body Repair

Automotive Body Repair provides students with an understanding of the materials, measuring, welding, and information resources applicable to collision repair. Students will study steel and aluminum dent repair, including the welding practices commonly performed within an automotive repair environment. Students will gain basic skills and knowledge in oxy-fuel welding, cutting,

brazing, and plasma cutting, gas metal arc welding, squeeze type resistance welding, exterior panel welding, and I-CAR welding test preparation. Students will also learn the installation of moldings, ornaments, and fasteners with an emphasis on sheet metal analysis and safety.

- Required Prerequisites: Principles of Collision Repair

3. **7206 Plastic Body Repair & Paint Fundamentals**

Plastic Body Repair and Paint Fundamentals introduce the types of fiberglass and plastic materials used in auto body repair and considerations for automotive painting. Students will explore methods for repairing fiberglass and plastic damage, like welding, reinforcing, repairing holes, and retexturing plastic. Students will be asked to demonstrate the proper use of primers and sealers, spraying techniques, and an understanding of various paint finishes.

- Required Prerequisites: Principles of Collision Repair and Automotive Body Repair

AUTOMOTIVE COLLISION REPAIR 2:

7380 Collision Repair Capstone

This course further explores important skills and competencies within the Automotive Body Technology Pathway. Topics such as Automotive Painting Technology, Collision Damage Appraising, and Fiberglass Plastic Repair. Additionally, Co-Op and Internship opportunities will be available for students.

- Required Prerequisites: Automotive Collision Repair Technology 1 (Principles of Collision Repair, Automotive Body Repair, and Plastic Body Repair & Paint Fundamentals)

Automotive Services Technology

AUTOMOTIVE SERVICES TECHNOLOGY 1:

*Students will sign up for all three in one year: Principles of Automotive Services, Automotive Brakes, and Electrical, and Engine Performance in order to fulfill Automotive Services Technology 1.

1. **7213 Principles of Automotive Services**

This course gives students an overview of the operating and general maintenance systems of the modern automobile. Students will be introduced to the safety and operation of equipment and tools used in the automotive industry. Students will study the maintenance and light repair of automotive systems. Also, this course gives students an overview of the electrical operating

systems of the modern automobile. Students will be introduced to the safety and operation of equipment and tools used in the electrical diagnosis and repair in the automotive electrical industry. Students will study the fundamentals of electricity and automotive electronics.

2. 7205 Brake Systems

This course gives students an in-depth study of vehicle electrical systems. Students will study the fundamentals of electricity and automotive electronics in various automotive systems. Additionally, it teaches theory, service, and repair of automotive braking systems. This course provides an overview of various mechanical brake systems used in today's automobiles. This course will emphasize professional diagnosis and repair methods for brake systems.

- Required Prerequisites: Principles of Automotive Services

3. 7212 Steering and Suspensions

This course takes an in-depth look at engine performance, including concepts in the diagnosis and repair of ignition, fuel, emission, and related computer networks. This course presents engine theory and operation and studies the various engine designs utilized today. This course also takes an in-depth look at engine performance, including advanced concepts in the diagnosis and repair of ignition, fuel, emission, and related computer networks. This course presents engine theory and operation and studies the various engine designs utilized today. Hybrid/Alternative fuel technology will also be introduced.

- Required Prerequisites: Principles of Automotive Services and Brake Systems

AUTOMOTIVE SERVICES TECHNOLOGY 2:

7375 Automotive Service Capstone

This course further explores important skills and competencies within the Automotive Service Technology Pathway. Topics such as Steering & Suspension, Engine Repair, Climate Control, and Driveline Service. Additionally, Co-Op and Internship opportunities will be available for students.

- Required Prerequisites: Automotive Services Technology 1 (Principles of Automotive Services, Brake Systems, and Steering & Suspensions)

Work-Based Learning

Applied Work-Based Learning Capstone is an instructional strategy that can be implemented as a standalone course or a component of any CTE course that prepares students for college and careers. This strategy builds individual students' skills and knowledge within the area of interest. A standards-based training plan is developed by the student, teacher, and workplace mentor to guide the student's work-based learning experiences and assist in evaluating progress and performance, whether WBL is a standalone course or a component of a discipline-specific CTE course.

- Counts as an Employability Requirement, Capstone Course or elective for the Certificate of Completion