



# Illinois State Board of Education **State CTE Course Catalog**

SY 2026

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## Foreword

The Illinois CTE Course Catalog provides state-approved Career Technical Education (CTE) courses with descriptions for secondary education. The CTE courses are organized by Subject Area.

## 02 Mathematics

**02154A001**

**Business Math**

**CTE Course**

*Available Starting SY 2023*

Business Mathematics courses provide students with mathematical competencies in business applications and intended for those studying business, finance, or other related business careers. Topics include mathematical competencies such as arithmetic, measurement, statistics, ratio and proportion, exponents, formulas, and equations that are applied to business problems and situations. Applications might include wages, hourly rates, payroll deductions, sales, margins, receipts, accounts payable and receivable, financial reports, discounts, interest, business analysis and decision making, and debt decisions and implications.

### 03 Life and Physical Sciences

#### **03001A001 Technology and Society (EbD)**

**CTE Course**

*Available SY 2015 - 2016*

Technology and Society course will provide an overview of the importance of, impact on, and relationships between technological endeavors and society at large. This courses typically emphasize economic and environmental factors and impacts and the influences of society on technological endeavors. Students will be introduced to structured methods for assessing technology and science issues and developing defensible opinions and positions.

#### **03053A001 Anatomy & Physiology for Health Sciences**

**CTE Course**

*Available Starting SY 2021*

Anatomy & Physiology for Health Sciences courses integrate microbiology, disease processes, growth and development, and genetics with anatomy and physiology of the body systems. Students investigate how to prevent, diagnose, and treat disease and various health conditions. Typically, these courses reinforce science, mathematics, communications, health, and social studies principles and relate them to health care.

#### **03064A001 Advanced Biological Science Applications in Agriculture**

**CTE Course**

*Available Starting SY 2021*

Advanced Biological Science Applications in Agriculture courses are designed to provide information regarding the fundamental concepts of life and life processes as related to the local environment. Course topics may include nature appreciation, local flora and fauna, biology, and zoology. The course will be valuable preparation for further education and will increase the relevance of science through the applied setting of agriculture by enhancing literacy in science and the scientific process. Improving computer and workplace skills will be a focus. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

#### **03064A002 Advanced Biological Science Applications in Agriculture (BSAA) - Animals**

**CTE Course**

*Available Starting SY 2022*

This course is designed to reinforce and extend students' understanding of biology by associating advanced scientific principles and concepts with relevant applications in agricultural animal systems. Students will examine major phases of animal agriculture and specific biological science concepts that govern management decisions in the animal industry. Topics of study are in the areas of growth and development of animals – embryology, ethology, nutrition, immunity systems, and processing animal products preservation, fermentation, and pasteurization. The course will be valuable preparation for post-secondary education and will increase the relevance of science through the applied setting of agricultural animal systems by enhancing literacy in science and the scientific process. Improving computer and workplace skills will be a focus. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### 03 Life and Physical Sciences

**03064A003            Advanced Biological Science Applications in            CTE Course**  
**Agriculture (BSAA) - Plants**

*Available Starting SY 2022*

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

**03068A001            Medical Interventions            CTE Course**

*Available Starting SY 2021*

Medical Interventions courses provides opportunities to investigate how to prevent, diagnose, and treat disease. Students explore how to detect and fight infection; screen and evaluate the code in human DNA; evaluate cancer treatment options; and prevail when the organs of the body begin to fail. Through real-world cases, students are exposed to a range of interventions related to immunology, surgery, genetics, pharmacology, medical devices, and diagnostics.

**03069A001            Nutrition and Diet Therapy            CTE Course**

*Available Starting SY 2025*

Nutrition and Diet Therapy courses are designed to prepare students for health care and food service professions. Topics should include fundamentals of nutrition, principles of diet therapy, exploration of the relationship between nutrition and disease, and the promotion of healthy eating styles and proper food preparation for all age groups.

**71004A001            Energy and the Environment            CTE Course**

*Available SY 2012 - 2021*

Students investigate the importance of energy in our lives and the impact energy use has on the environment. They design and model alternative energy sources and participate in an energy expo to demonstrate energy concepts and innovative ideas. Students evaluate ways to reduce energy consumption through energy efficiency and waste management techniques.

## 04 Social Sciences and History

### **04162A001 Law Studies CTE Course**

*Available Starting SY 2012*

Law Studies courses examine the history and philosophy of law as part of U.S. society and include the study of the major substantive areas of both criminal and civil law, such as constitutional rights, torts, contracts, property, criminal law, family law, and equity. Although these courses emphasize the study of law, they may also cover the workings of the legal system.

### **04163A001 Consumer Law CTE Course**

*Available Starting SY 2020*

Consumer Law courses present a history and philosophy of law and the legal system in the United States, with a particular emphasis on those topics affecting students as consumers and young adults (such as contractual laws, laws pertaining to housing and marriage, and constitutional rights).

### **04165A001 Legal System CTE Course**

*Available Starting SY 2012*

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

### **04166A001 Paralegal Studies CTE Course**

*Available Starting SY 2021*

This course provides an introduction to the legal system and the paralegal profession. Students will analyze the training and role of the paralegal as well as the ethical and professional practice standards applicable to both lawyers and paralegals. Topics might also include legal terminology, legal citation, ethics, investigation skills, and a thorough discussion of the structure of both the federal and state judicial systems.

### **04166A002 Court Reporting & Stenography CTE Course**

*Available Starting SY 2021*

Court Reporting and Stenography is designed to prepare students to enter the field of shorthand reporting, court reporting, captioning and Communication Access Realtime Translation (CART). Students will continue to develop skills in the following areas: reading and translating stenographic notes; edit transcripts; demonstrate the printing of paper and pdf transcripts; modify, create, and use master dictionary and job dictionaries; develop familiarity with common materials in court reporting and stenography (e.g., jury charge, literary material, medical terminology, etc.). The course also provides preparation for Illinois Certified Shorthand Reporter (CSR) exam including developing speed to 180-225 words per minute on literary, jury charge, and Q&A material and preparation for the written knowledge portion of CSR by reviewing grammar, vocabulary, and technology.

## 04 Social Sciences and History

### **04166A003 Introduction to Stenography and Machine Shorthand Theory**

**CTE Course**

*Available Starting SY 2022*

Introduction to Stenography and Machine Shorthand Theory introduces students to the fields of shorthand reporting, court reporting, captioning and Communication Access Realtime Translation (CART). The course provides an examination of the history of reporting, equipment needs, technological trends, and the roles of reporters within legal system, communications, business environment, and educational system. Additional topics include an introduction to theory, keyboard familiarization, vowel usage, punctuation, numbers, high-frequency words, and advanced writing principles. Students will begin developing foundational real-time writing skills and keyboard mastery through practice of finger drills and sentence drills involving high-frequency words and phrases.

### **04166A004 Court Reporting and Stenography Speedbuilding Lab**

**CTE Course**

*Available Starting SY 2022*

Court Reporting and Stenography Speedbuilding Lab courses provide additional opportunities for students to develop speed and fluency to 225 words per minute in preparation for the Certified Shorthand Reporter (CSR) exam. Course topics could also include additional preparation for the written knowledge portion of the CSR exam and exploration of legal and medical terminology.

### **04198A001 Legal Assistant/Paralegal Workplace Experience**

**CTE Course**

*Available Starting SY 2021*

Legal Assistant/Paralegal Workplace Experience courses provide students with work experience in a field related to legal assisting. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

## 04 Social Sciences and History

### 04198A002 Court Reporting and Captioning Workplace Experience

CTE Course

*Available Starting SY 2022*

Court Reporting and Captioning Workplace Experience courses provide students with work experience in a field related to Court Reporting and Captioning. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

## 05 Fine and Performing Arts

### **05193A001 Interior Design**

**CTE Course**

*Available Starting SY 2021*

Interior Design courses emphasize applying the fundamental processes of artistic expression to design an interior living or working space. Students analyze and apply a variety of media, techniques, and processes in their interior design work. Courses may also include an understanding of aesthetic issues associated with interior design. Students study the art or process of designing the interior of a room or building and focus on enhancing the interiors of a space to achieve a healthy and more aesthetically pleasing environment. Students will study interior designs from historical, contemporary, and world cultures. Students engage in critique of their interior designs, the designs of others, and designs by professional interior designers for the purpose of reflecting on and refining work for presentation.

### **05252A001 Interactive Design**

**CTE Course**

*Available Starting SY 2022*

Interactive Design courses explore the creative, technical, and conceptual aspects of designing and producing interactive media arts experiences, products, and services, including reactive (sensory-based devices) and interactive technologies, 3D game mechanics, interface design, mobile device applications, social media-based and web multimedia, physical spaces, augmented reality, and/or virtual reality. Topics may include aesthetic meaning; artistic, design and technical methods and practices; story and audience engagement; analysis and media literacy; construction, development, processing, modeling, simulation, and programming of interactive experiences; their transmission, distribution, placement and marketing; and contextual, cultural, and historical aspects and considerations.

## 08 Physical, Health, and Safety Education

### **08053A001      Community Health Worker**

**CTE Course**

*Available Starting SY 2025*

Community Health Worker courses prepares individuals to serve as facilitators, advocates, and referral professionals navigating and coordinating health care and related social services with affected recipient communities. Topics include instruction on practices in public and community health, human and social services, community capacity building, health services administration, group counseling, health education, nutrition education, group advocacy, cross-cultural and multilingual communication, and applicable laws and policies.

### **08055A001      First Aid and Safety**

**CTE Course**

*Available Starting SY 2021*

Safety and First Aid courses provide specialized instruction in first aid techniques, cardiopulmonary resuscitation (CPR), relief of obstructed airways, and general safety procedures and behaviors. These courses may include such topics as an overview of community agencies and hotlines providing emergency care and information and opportunities for first aid and CPR certification. Instructors must have the requisite training and/or certifications to provide this training.

## 09 Military Science

### **09001A001 Introduction to Jr. ROTC CTE Course**

*Available Starting SY 2022*

Introduction to Junior Reserve Officer Training Corps (ROTC) courses introduce students to the purposes and objectives of the Reserve Officer Training Corps program, which seeks to educate high school students in citizenship, promote community service, and instill responsibility. As part of that introduction, course topics typically include a brief history of the military branches in the United States and the basics of military drill, ceremony, and rank structure.

### **09003A001 ROTC Drill CTE Course**

*Available Starting SY 2022*

Reserve Officer Training Corps (ROTC) Drill courses provide students with an additional opportunity to improve their skills in military precision. These courses emphasize marching style and formations, firearm manipulation, body coordination and mechanics, and performing as a member of an orchestrated team. Class members typically participate in ceremonies and competitions.

### **09004A001 Military Leadership CTE Course**

*Available Starting SY 2022*

Military Leadership courses focus solely on increasing students' leadership skills, particularly as they relate to military operations, customs, and hierarchies. These courses are typically a regular part of the ROTC programs described below (typically the final course within a program series); this Military Leadership course code and title should be used when those descriptions do not apply. The principles and skills taught in these courses include supervision, motivation, evaluation, and setting an example, and their application typically include military drill and inspections, athletic events, and other school activities.

### **09051A001 Army Junior ROTC I CTE Course**

*Available Starting SY 2022*

Army Junior Reserve Officer Training Corps (ROTC) I courses include instruction in the organization and functions of the U.S. Army, leadership skills, and life skills education. The content of these courses cover (but is not limited to) the history and evolution of the Army, including its structure, operations, customs and courtesies; maps and navigation; first aid, personal hygiene, and field sanitation; and substance abuse prevention. These courses also introduce students to principles of leadership and citizenship.

### **09052A001 Army Junior ROTC II CTE Course**

*Available Starting SY 2022*

Army Junior Reserve Officer Training Corps (ROTC) II courses build upon the content of Army Junior ROTC I and include (but are not limited to) ongoing instruction in leadership principles and citizenship; drill and ceremonies; organizational structure; command and staff relationships, functions, and responsibilities; significant military campaigns and leaders; map-reading and orienteering; weapon safety and marksmanship; and survival training.

## 09 Military Science

### **09053A001 Army Junior ROTC III**

**CTE Course**

*Available Starting SY 2022*

Army Junior Reserve Officer Training Corps (ROTC) III courses build upon prior Army Junior ROTC courses, giving more emphasis to leadership development. These courses serve to strengthen students' leadership skills (including planning, problem-solving, motivation, and performance appraisal) and management skills (with regard to time, personnel, and other resources) through allowing them to assume leadership duties. Students study topics introduced in earlier years—such as military history, map-reading and orienteering, marksmanship, and drill and ceremonies—at a more advanced level and are also provided with military service opportunities.

### **09054A001 Army Junior ROTC IV**

**CTE Course**

*Available Starting SY 2022*

Army Junior Reserve Officer Training Corps (ROTC) IV courses focus on practical leadership by assigning students to command and staff positions in which they present instruction to lower Army Junior ROTC classes and continue to study and review staff functions and actions, staff-commander relationships, and leadership principles. Topics introduced in earlier years may be studied at more advanced levels.

### **09101A001 Naval Junior ROTC I**

**CTE Course**

*Available Starting SY 2022*

Naval Junior Reserve Officer Training Corps (ROTC) I courses emphasize citizenship and leadership development, as well as maritime heritage, sea power, and Naval operations and customs. These courses include (but are not limited to) an introduction to the Naval Junior ROTC program, U.S. Navy mission and organization, maritime geography, naval history, basic seamanship, oceanography, and health education.

### **09102A001 Naval Junior ROTC II**

**CTE Course**

*Available Starting SY 2022*

Naval Junior Reserve Officer Training Corps (ROTC) II courses build upon the content of Naval Junior ROTC I. These courses include (but are not limited to) leadership principles and discipline, citizenship, naval opportunities and career planning, naval ships and weaponry, seamanship, meteorology and weather, and survival training. Students continue to learn teamwork, naval history, and military principles.

### **09103A001 Naval Junior ROTC III**

**CTE Course**

*Available Starting SY 2022*

Naval Junior Reserve Officer Training Corps (ROTC) III courses build upon prior Naval Junior ROTC courses. These courses include (but are not limited to) leadership principles and discipline, military justice, international law and the sea, naval intelligence/strategies and national security, and sciences involved in naval operations, such as electricity, electronics, communications technologies, and so on. Students continue to learn teamwork, naval history, and military principles.

## 09 Military Science

### **09104A001      Naval Junior ROTC IV      CTE Course**

*Available Starting SY 2022*

Naval Junior Reserve Officer Training Corps (ROTC) IV courses are focused on practical leadership, placing students in positions where they can learn, practice, and understand skills involved in leading others, such as supervision, motivation, evaluation, setting examples, and problem-solving. Application of these skills usually includes military drill and inspections, athletic events, and other school activities. Topics introduced in earlier years may be studied at more advanced levels.

### **09151A001      Air Force Junior ROTC I      CTE Course**

*Available Starting SY 2022*

Air Force Junior Reserve Officer Training Corps (ROTC) I courses include both aerospace studies and leadership/life skills education. In these courses, leadership/life skills lessons cover the heritage and development of the Air Force, including its structure, operations, customs, and courtesies. Aerospace topics include the development, history, and impact of flight; aircraft and spacecraft; and the environment in which these crafts operate.

### **09152A001      Air Force Junior ROTC II      CTE Course**

*Available Starting SY 2022*

Air Force Junior Reserve Officer Training Corps (ROTC) II courses include both aerospace studies and leadership/life skills education. In these courses, leadership/life skills lessons cover intercommunication skills, drill, and military ceremonies. Aerospace topics emphasize the science of flight, including factors of aerospace power, aircraft flight, and navigation.

### **09153A001      Air Force Junior ROTC III      CTE Course**

*Available Starting SY 2022*

Air Force Junior Reserve Officer Training Corps (ROTC) III courses include both aerospace studies and leadership/life skills education. These courses continue to develop students' life and leadership skills and the ways in which they apply to military life. Aerospace topics emphasize space technology and exploration; examine national defense systems; and advance students' knowledge of aviation, propulsion, and navigation.

### **09154A001      Air Force Junior ROTC IV      CTE Course**

*Available Starting SY 2022*

Air Force Junior Reserve Officer Training Corps (ROTC) IV courses include both aerospace studies and leadership/life skills education. The life skills education portion of these courses concentrates on leadership and management principles and career opportunities, and aerospace topics include advanced aerodynamics and aeronautics. Course content may also cover elements of national power and relationships between the nations of the world.

## 09 Military Science

### **09201A001 Marine Corps Junior ROTC I**

**CTE Course**

*Available Starting SY 2022*

Marine Corps Junior Reserve Officer Training Corps (ROTC) I courses introduce the Marine Corps Junior ROTC program, with an emphasis on personal growth and responsibility along with general military subjects. These courses include (but are not limited to) physical training; health education, including hygiene, first aid, nutrition, and substance abuse prevention; and communication skills. In these courses, students are introduced to and study Marine Corps values and code of conduct; drill and ceremony; military uniforms, customs, and courtesies; military history; and the Marine Corps structure and chain of command.

### **09202A001 Marine Corps Junior ROTC II**

**CTE Course**

*Available Starting SY 2022*

Marine Corps Junior Reserve Officer Training Corps (ROTC) II courses build upon Marine Corps Junior ROTC I. These courses emphasize personal growth and responsibility, leadership, and citizenship along with military subjects that typically include the mission, organization, and history of the Marine Corps; geography, maps, and navigation; drill and ceremony; and military justice. Students learn about such leadership skills as authority, responsibility, and accountability and citizenship topics including U.S. government structures, documents, and symbols.

### **09203A001 Marine Corps Junior ROTC III**

**CTE Course**

*Available Starting SY 2022*

Marine Corps Junior Reserve Officer Training Corps (ROTC) III courses build upon prior Marine Corps Junior ROTC courses. These courses include (but are not limited to) leadership practice, including training, inspection and evaluation; public service career opportunities; and citizenship responsibilities. These courses cover such personal skills as financial planning, saving and investing, and evaluating credit and insurance terms. Students learn about the structures of other armed service branches, advance their mapping and navigation skills, and may study firearm use, safety and marksmanship. Students continue to learn teamwork, Marine Corps history, and military principles.

### **09204A001 Marine Corps Junior ROTC IV**

**CTE Course**

*Available Starting SY 2022*

Marine Corps Junior Reserve Officer Training Corps (ROTC) IV courses focus on the practical application of skills learned throughout the program: leadership, communication (written and verbal), personal growth, and public service. These courses emphasize drill and ceremony, physical fitness, marksmanship, land navigation, and military history at more advanced levels than in previous courses.

## 09 Military Science

**09998A001**

**Air Force Workplace Experience**

**CTE Course**

*Available Starting SY 2022*

Air Force Workplace Experience courses provide students with work experience within the field of military science and are supported by classroom attendance and discussion. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

**09998A002**

**Army Workplace Experience**

**CTE Course**

*Available Starting SY 2022*

Army Workplace Experience courses provide students with work experience within the field of military science and are supported by classroom attendance and discussion. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

**09998A003**

**Naval Workplace Experience**

**CTE Course**

*Available Starting SY 2022*

Naval Workplace Experience courses provide students with work experience within the field of military science and are supported by classroom attendance and discussion. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

## 09 Military Science

**09998A004 Marine Corp Workplace Experience**

**CTE Course**

*Available Starting SY 2022*

Marine Corp Workplace Experience courses provide students with work experience within the field of military science and are supported by classroom attendance and discussion. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

## 10 Information Technology

### **10001A001 Introduction to Computer Technology**

**CTE Course**

*Available Starting SY 2020*

Introduction to Computer Technology courses are an approved part of career and technical education program that introduce students to computers, including peripheral and mobile devices; the functions and uses of computer technology; the language used in the industry; possible applications of various computer-based technologies; and occupations related to computer technology hardware and software industries. These courses typically explore legal and ethical issues associated with computer technology use, as well as how changes influence modern society. The appropriate use of technology and industry-standard equipment is an integral part of this course.

### **10003A001 Computer and Information Technology**

**CTE Course**

*Available Starting SY 2019*

Computer and Information Technology courses are an approved part of career and technical education program that teach students to operate and use computer and information technology, emphasizing their role as tools to communicate more effectively, conduct research more efficiently, and increase productivity. Course content includes the legal and ethical issues involved with computer technology and use. The appropriate use of technology and industry-standard equipment is an integral part of this course.

### **10004A001 Computer Concepts and Software Applications**

**CTE Course**

*Available Starting SY 2011*

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

## 10 Information Technology

### 10005A001 Information Processing I

CTE Course

*Available Starting SY 2011*

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

### 10005A002 Information Processing II

CTE Course

*Available Starting SY 2011*

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

## 10 Information Technology

### 10006A001 Telecommunications

CTE Course

*Available Starting SY 2020*

Telecommunications courses address the growth in global communications and the emerging equipment and systems needed to successfully communicate in a global environment. These courses cover such topics as data communication protocol and systems, government regulations of the communications industry, the use of cost-effective and productive tools to transmit messages and data, and live synchronistic video exchanges. Other topics may include telecommunications terminology, tools and test equipment; customer service experience; and installation, repair, and delivery of telecommunications systems. In these courses, students may learn about such communication systems as e-mail, internet, or e-commerce, local area network (LAN), wide area network (WAN), voice transmission, cell phone technology, teleconferencing, and videoconferencing.

### 10008A001 Digital Literacy

CTE Course

*Available Starting SY 2017*

This foundation-level course prepares students to use technology in a proficient and responsible manner in school, in the workforce, and in everyday life. The course contains skills for working in an Internet or networked environment and the knowledge of what it means to be a good digital citizen and the ability to use technology responsibly. Topics include the benefits and risks of sharing information online, and the possible consequences of inappropriate sharing (oversharing). Students explore the legal and ethical dimensions of respecting creative work. Technology use is a vital employability skill for entry-level and upper-level management positions. Students may be provided with the opportunity to seek industry-recognized digital literacy certifications.

### 10011A001 Computer Science Principles

CTE Course

*Available Starting SY 2021*

Computer Science Principles courses are an approved part of career and technical education program that provide students the opportunity use programming, computational thinking, and data analytics to create digital artifacts and documents representing design and analysis in areas including the Internet, algorithms, and the impact that these have on science, business, and society. Computer Science Principles courses teach students to use computational tools and techniques including abstraction, modeling, and simulation to collaborate in solving problems that connect computation to their lives. Upon successful completion of this course, students will have acquired entry-level skills for employment and/or be prepared for postsecondary education

## 10 Information Technology

### **10012A001 Introduction to Computer Science**

**CTE Course**

*Available Starting SY 2021*

Introduction to Computer Science courses are an approved part of career and technical education program that present students with the conceptual underpinnings of computer science through an exploration of human computer interaction, web design, computer programming, data modeling, and robotics. While these courses include programming, the focus is on the computational practices associated with doing computer science, rather than just a narrow focus on coding, syntax, or tools. Introduction to Computer Science courses teach students the computational practices of algorithm design, problem solving, and programming within a context that is relevant to their lives. The appropriate use of technology and industry-standard equipment is an integral part of this course.

### **10019A001 AP Computer Science Principles (CTE)**

**CTE Course**

*Available Starting SY 2023*

AP Computer Science Principles (CTE) courses are an approved part of career and technical education program that follow the College Board's suggested curriculum designed to parallel college-level computer science principles courses with an additional focus on preparing for a career in computer science. AP Computer Science Principles courses introduce students to the fundamental ideas of computer science and how to apply computational thinking across multiple disciplines. These courses teach students to apply creative designs and innovative solutions when developing computational artifacts. These courses cover such topics as abstraction, communication of information using data, algorithms, programming, the Internet, and global impact. The appropriate use of technology and industry-standard equipment is an integral part of this course.

### **10020A001 Cybersecurity**

**CTE Course**

*Available Starting SY 2021*

Cybersecurity courses introduce students to the concepts of cybersecurity. These courses provide students with the knowledge and skills to assess cyber risks to computers, networks, and software programs. Students will learn how to create solutions to mitigate cybersecurity risks. These courses may also cover the legal environment and ethical computing behavior related to cybersecurity.

### **10051A001 Information Management**

**CTE Course**

*Available Starting SY 2020*

Information Management courses provide students with the knowledge and skills to develop and implement a plan for an information system that meets the needs of business. Students develop an understanding of information system theory, skills in administering and managing information systems, and the ability to analyze and design information systems.

## 10 Information Technology

### **10052A001 Database Management and Data Warehousing CTE Course**

*Available Starting SY 2020*

Database Management and Data Warehousing courses provide students with the skills necessary to design databases to meet user needs. Courses typically address how to enter, retrieve, and manipulate data into useful information. More advanced topics may cover implementing interactive applications for common transactions and the utility of mining data.

### **10053A001 Database Applications CTE Course**

*Available Starting SY 2020*

Database Application courses provide students with an understanding of database development, modeling, design, and normalization. These courses typically cover such topics as SELECT statements, data definition, manipulation, control languages, records, and tables. In these courses, students may use Oracle WebDB, SQL, PL/SQL, SPSS, and SAS and may prepare for certification.

### **10102A001 Computer Networking I CTE Course**

*Available Starting SY 2011*

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

### **10102A002 Computer Networking II CTE Course**

*Available Starting SY 2011*

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

## 10 Information Technology

### **10108A001 Network Security**

**CTE Course**

*Available Starting SY 2023*

Network Security courses provide students with an understanding of network security principles and implementation in computer and information technology field. Course topics usually include authentication, the types of attacks and malicious code that may be used against computer networks, the threats and countermeasures for e-mail, Web applications, remote access, and file and print services. These courses may also cover a variety of security topologies as well as technologies and concepts used for providing secure communication channels, secure internetworking devices, intrusion detection systems, and firewalls.

### **10109A001 Essentials of Network Operating Systems**

**CTE Course**

*Available Starting SY 2020*

Essentials of Network Operating Systems courses provide students with an overview of multi-user, multi-tasking network operating systems. In these courses, students study the characteristics of operating systems, such as Linux, and various Windows network operating systems and explore a range of topics including installation procedures, security issues, back-up procedures, and remote access. Advanced topics may include network administration, including account management, training, evaluating new technology, developing system policies, troubleshooting, e-mail and business communications and Web site management.

### **10110A001 Microsoft Certified Professional (MCP)**

**CTE Course**

*Available SY 2019 - 2020*

Microsoft Certified Professional courses provide students with the knowledge and skills necessary to be employed as a network administrator in the latest Windows server-networking environment. Topics include installing, configuring, and trouble-shooting the Windows server. These courses prepare students to set up network connections; manage security issues and shares; and develop policies. Students are typically encouraged to take the MCP exam.

### **10111A001 Cybersecurity**

**CTE Course**

*Available SY 2019 - 2020*

Cybersecurity courses introduce students to the concepts of cybersecurity. These courses provide students with the knowledge and skills to assess cyber risks to computers, networks, and software programs. Students will learn how to create solutions to mitigate cybersecurity risks. These courses may also cover the legal environment and ethical computing behavior related to cybersecurity.

### **10148A001 Networking Systems Workplace Experience**

**CTE Course**

*Available Starting SY 2021*

Networking Systems Workplace Experience courses provide students with work experience in fields related to networking systems. Goals are typically set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses may include classroom activities as well, involving further study of the field or discussion regarding experiences that students encounter in the workplace.

## 10 Information Technology

### **10152A001 Computer Operations and Programming I**

**CTE Course**

*Available Starting SY 2011*

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

### **10152A002 Computer Operations and Programming II**

**CTE Course**

*Available Starting SY 2011*

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

### **10153A001 Visual Basic (VB) Programming**

**CTE Course**

*Available SY 2019 - 2020*

Visual Basic (VB) Programming courses provide an opportunity for students to gain expertise in computer programs using the Visual Basic (VB) language. As with more general computer programming courses, the emphasis is on how to structure and document computer programs and how to use problem-solving techniques. These courses cover such topics as the use of text boxes, scroll bars, menus, buttons, and Windows applications. More advanced topics may include mathematical and business functions and graphics.

### **10154A001 C++ Programming**

**CTE Course**

*Available Starting SY 2020*

C++ Programming courses provide an opportunity for students to gain expertise in computer programs using the C++ language. As with more general computer programming courses, the emphasis is on how to write logically structured programs, include appropriate documentation, and use problem-solving techniques. More advanced topics may include multi-dimensional arrays, functions, sorting, loops, and records.

## 10 Information Technology

### 10155A001 Java Programming

CTE Course

*Available Starting SY 2020*

Java Programming courses provide students with the opportunity to gain expertise in computer programs using the Java language. As with more general computer programming courses, the emphasis is on how to structure and document computer programs, using problem-solving techniques. Topics covered in the course include syntax, I/O classes, string manipulation, and recursion.

### 10160A001 Artificial Intelligence

CTE Course

*Available Starting SY 2019*

This Artificial Intelligence course is an approved part of career and technical education program that introduce students to the concepts of Artificial Intelligence. This course will review the evolution of AI, explore future applications, and may also describes how artificial Intelligence is used in fields such as games, speech recognition, and computer vision. In this course, you will learn about different types of intelligent agents and their environments. The course Artificial Intelligence also covers the concepts of machine learning, natural language processing, expert systems, and robots. The ethics and safety issues related to artificial intelligence may also be covered in this course. The appropriate use of technology and industry-standard equipment is an integral part of this course.

### 10198A001 Computer Programming Workplace Experience

CTE Course

*Available Starting SY 2021*

Computer Programming Workplace Experience courses provide students with work experience in fields related to computer programming. Goals are typically set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses may include classroom activities as well, involving further study of the field or discussion regarding experiences that students encounter in the workplace.

### 10201A001 Web Page and Interactive Media Development I

CTE Course

*Available Starting SY 2011*

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

## 10 Information Technology

### **10201A002      Web Page and Interactive Media Development II**

**CTE Course**

*Available Starting SY 2011*

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

### **10202A001      Digital Graphics**

**CTE Course**

*Available Starting SY 2011*

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

### **10202A002      Beginning Digital Graphics**

**CTE Course**

*Available Starting SY 2012*

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

### **10203A001      Interactive Media**

**CTE Course**

*Available Starting SY 2020*

Interactive Media courses provide students with the knowledge and skills to create, design, and produce interactive digital media products and services. The courses may emphasize the development of digitally generated and/or computer-enhanced media. Course topics may include 3D animation, graphic media, web development, and virtual reality. Upon completion of these courses, students may be prepared for industry certification.

### **10203A003      Interactive Media**

**CTE Course**

*Available Starting SY 2020*

Interactive Media courses provide students with the knowledge and skills to create, design, and produce interactive digital media products and services. The courses may emphasize the development of digitally generated and/or computer-enhanced media. Course topics may include 3D animation, graphic media, web development, and virtual reality. Upon completion of these courses, students may be prepared for industry certification.

## 10 Information Technology

### **10204A001 Computer Gaming and Design**

**CTE Course**

*Available SY 2019 - 2021*

Computer Gaming and Design courses prepare students to design computer games by studying design, animation, artistic concepts, digital imaging, coding, scripting, multimedia production, and game play strategies. Advanced course topics include, but are not limited to, level design, environment and 3D modeling, scene and set design, motion capture, and texture mapping.

### **10204A002 Mobile Applications**

**CTE Course**

*Available SY 2019 - 2021*

Mobile Applications courses provide students with opportunities to create applications for mobile devices using a variety of commercial and open source software. These courses typically address the installation and modification of these applications, as well as customer service skills to handle user issues.

### **10205A001 Computer Gaming and Design**

**CTE Course**

*Available Starting SY 2021*

Computer Gaming and Design courses prepare students to design computer games by studying design, animation, artistic concepts, digital imaging, coding, scripting, multimedia production, and game play strategies. Advanced course topics include, but are not limited to, level design, environment and 3D modeling, scene and set design, motion capture, and texture mapping.

### **10206A001 Mobile Applications**

**CTE Course**

*Available Starting SY 2021*

Mobile Applications courses provide students with opportunities to create applications for mobile devices using a variety of commercial and open source software. These courses typically address the installation and modification of these applications, as well as customer service skills to handle user issues.

### **10248A001 Web Page and Media Design Workplace Experience**

**CTE Course**

*Available Starting SY 2021*

Web Page and Media Design Workplace Experience courses provide students with work experience in fields related to web page and media design. Goals are typically set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses may include classroom activities as well, involving further study of the field or discussion regarding experiences that students encounter in the workplace.

## 10 Information Technology

### 10252A001 Computer Maintenance I

CTE Course

*Available Starting SY 2011*

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

### 10252A002 Computer Maintenance II

CTE Course

*Available Starting SY 2011*

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

### 10301A001 Computer Forensics

CTE Course

*Available Starting SY 2021*

Computer Forensics courses address the preservation, identification, extraction, documentation, and interpretation of computer data. Topics covered may include legal concepts, evidence handling and preservation, file system structures, chain of custody, and identification and recovery of computer data. These courses may also cover the need to perform an investigation and how to collect evidence and analyze data.

## 10 Information Technology

### 10998A001 Computer Science Workplace Experience

CTE Course

*Available Starting SY 2021*

Computer Science Workplace Experience courses are an approved part of career and technical education program that provide students with work experience in fields related to computer and/or information sciences. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### 10998A002 Information Technology Workplace Experience

CTE Course

*Available Starting SY 2022*

Information Technology Workplace Experience courses provide work experience in fields related to the Information Technology cluster. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### 10999A002 AP Cybersecurity (CTE)

CTE Course

*Available Starting SY 2026*

AP Cybersecurity provides a college-level introduction to protecting information and systems. Students study threats, vulnerabilities, and risks, and explore defense strategies across networks, devices, and data. The course emphasizes practical approaches to managing risk and considers the impact of cybersecurity on individuals, organizations, and society.

## 11 Communication and Audio/Visual Technology

### **11001A001 Introduction to Communication**

**CTE Course**

*Available Starting SY 2022*

Introduction to Communication courses enable students to understand and critically evaluate the role of media in society. Course content typically includes investigation of visual images, printed material, and audio segments as tools of information, entertainment, and communication to influence opinion; improvement of presentation and evaluative skills in relation to mass media; recognition of various techniques for delivery of a particular message; and, in some cases, creation of a media product. The course may concentrate on a particular medium.

### **11001A002 Mass Communication**

**CTE Course**

*Available Starting SY 2025*

Mass Communication courses gives a broad overview of the journalism field by examining the nature, history, functions, and responsibilities of the mass media industries in a global environment, emphasizing mass media and its impact on public opinion. The course surveys the impact of radio, TV, books, newspapers, film, advertising, journalism, and other forms of media in our culture and critically analyzes legal and ethical media issues. Topics include modern journalism and dominant theories of communication and influences of the media in today's society. Students will explore career opportunities within the journalism field.

### **11002A001 Communication Technology**

**CTE Course**

*Available Starting SY 2011*

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

### **11004A001 Social Media**

**CTE Course**

*Available Starting SY 2021*

Social Media courses expose students to various types of social media and how social media has influenced society. These courses emphasize the forms, functions, regulations, implications, and utilization of social media.

## 11 Communication and Audio/Visual Technology

### 11048A001 Graphic Communications Workplace Experience

CTE Course

*Available Starting SY 2021*

Graphic Communications Workplace Experience courses provide students with work experience in a field related to communication. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### 11051A001 Audio/Video Production I

CTE Course

*Available Starting SY 2011*

This course is designed to provide students with the skills needed for a career in the technical aspects of radio and television broadcasting. Instruction includes camera operations, basic audio and video editing, sound and lighting techniques, and sound mixing. Students learn the operation, maintenance, and repair of video and DVD recording equipment, video/digital cameras, microphones, computers, lighting/grip equipment, and other production equipment used in the video and audio production of television programs. Students also learn to use, maintain, and repair various types of audio recorders, amplifiers, transmitters, receivers, microphones, and sound mixers to record and broadcast radio programs.

### 11051A002 Audio/Video Production II

CTE Course

*Available Starting SY 2011*

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

### 11051A003 Beginning Audio/Visual Production

CTE Course

*Available Starting SY 2012*

Beginning Audio/Visual Production course provide students with the basic knowledge and skills necessary for television, video, film, and/or radio production. Camera operation, use of graphics and other visuals, lighting, audio techniques, editing, production principles, and career opportunities are typical topics covered within this course.

## 11 Communication and Audio/Visual Technology

### 11052A001 Commercial Photography I

CTE Course

*Available Starting SY 2011*

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

### 11052A002 Commercial Photography II

CTE Course

*Available Starting SY 2011*

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

### 11052A003 Beginning Photography

CTE Course

*Available Starting SY 2012*

Beginning Photography course provides instruction in the use of conventional and digital cameras and laboratory film processing techniques. Topics covered in the course include composition and color dynamics; contact printing; enlarging; developing film and use of camera meters.

### 11053A001 Photographic Laboratory and Darkroom

CTE Course

*Available Starting SY 2022*

Photographic Laboratory and Darkroom courses prepare students to develop and print still or motion picture film. Topics covered in the course may include controlling resultant prints; touching up negatives; and finishing, coloring, restoring, and copying prints.

## 11 Communication and Audio/Visual Technology

**11054A001**

**Photo Imaging**

**CTE Course**

*Available Starting SY 2022*

Photo Imaging courses provide students with the opportunity to effectively communicate ideas and information via digital, film, still and video photography. Topics covered typically include composition, layout, lighting and supplies. More advanced courses may include instruction in specialized camera and equipment maintenance, application to commercial and industrial need and photography business operations.

**11098A001**

**Commercial Photography Workplace Experience**

**CTE Course**

*Available Starting SY 2021*

Commercial Photography Workplace Experience courses provide students with work experience in a field related to audio/visual technology and/or film. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

**11101A002**

**Journalism**

**CTE Course**

*Available Starting SY 2025*

Journalism courses introduce students to the principles of news gathering, reporting, interviewing, and writing for use in a variety of platforms, including print and online publications, TV, and radio. Students will explore career opportunities in the field of journalism and develop the skills to succeed in the industry. Topics could include the idea of news writing, types of journalistic articles, lead writing techniques, ethical issues in journalism, the application of effective research methods, and the types of publications and media that use journalistic writing and reporting. Students should use news writing techniques they learn to write basic stories under real time constraints.

**11103A001**

**Broadcasting Technology**

**CTE Course**

*Available Starting SY 2022*

Broadcasting Technology courses provide students with the knowledge and skills to produce television broadcast programs. Typically, students prepare and produce short programs, learning the technical aspects of the operation and how to evaluate programming and assess audience reaction and impact.

## 11 Communication and Audio/Visual Technology

### 11104A001 Publication Production

CTE Course

*Available Starting SY 2022*

Publication Production courses provide students with the knowledge and skills necessary to produce the school newspaper, yearbook, literary magazine, or other printed publications. Students will explore career opportunities in the field of journalism and publication and develop the skills to succeed in the industry. Students may gain experience in several components (e.g., writing, editing, layout, production) or may focus on a single aspect while producing the publication.

### 11105A001 News Editing

CTE Course

*Available Starting SY 2025*

News Editing courses provide students with experience editing and evaluating copy while exploring the role and responsibilities of an editor within a news media organization. Topics include news judgment; story judgement; legal and ethical issues that confront editors; principles of editing and design; how to organize newsroom workflow; and writing headlines, decks and captions. Students will learn to apply skills to print; television; radio; and online outlets, including social media. Students will curate content; line edit; concept edit; prepare heads, blurbs, refers, and other points of entry; edit content for social media; rewrite disorganized copy; and select and package copy and art.

### 11106A001 Social Media as News

CTE Course

*Available Starting SY 2025*

Social Media as News courses will explore the impact of social media on journalism. Students will learn the skills of becoming a content producer for social media. They will use a variety of interactive online media to develop skills and competencies as journalists. Students will publish writing, video, and audio content for social commentary and news on current events and learn skills to increase audience engagement.

### 11106A002 Podcasting

CTE Course

*Available Starting SY 2025*

Podcasting courses introduce students to the uses and practical applications of sound for multimedia and podcast creation. Students will learn to create and edit and publish podcasts to hosting and social media sites using free or inexpensive hardware and software. Students will be required to meet production deadlines while demonstrating knowledge of basic script writing, editing, and audio production of commercials, public service announcements, newscasts, and other studio projects produced using editing software.

### 11107A001 Radio Production

CTE Course

*Available Starting SY 2021*

Radio Production courses address practices related to the management and operation of a broadcasting station. Students are introduced to the radio industry, news reporting, and broadcast engineering. In these courses, students learn basic electricity and electronics, including all aspects of safety. Topics typically include operating audio boards, announcing, creating and producing audio scripts, and using digital audio software. Advanced courses may explore direct programming, on-air performance, and analysis of radio markets.

## 11 Communication and Audio/Visual Technology

### **11149A001 Broadcast Writing and Production CTE Course**

*Available Starting SY 2025*

Broadcast Writing and Production courses provide students with knowledge of writing for visual and audio presentations, including continuity, commercials, public service announcements, news, and special events. The course will focus on the skills necessary to create content and produce a television or radio news rundown: choosing newsworthy stories; allotting time; and determining transitions with organization, variety, and structure. Students will produce a live television or radio newscast. Additional topics should include the history of American radio and television broadcasting, comparative broadcasting systems, organization and operation of stations and networks, social and legal responsibilities of radio and television, broadcasting codes and guidelines, and audience survey results and methods.

### **11151A001 Digital Media Technology CTE Course**

*Available Starting SY 2022*

These courses are designed to give students the skills necessary to support and enhance their learning about digital medial technology. Topics covered in the course may include internet research, copyright laws, web-publishing, use of digital imagery, electronic forums, newsgroups, mailing lists, presentation tools, and project planning.

### **11152A001 Desktop Publishing CTE Course**

*Available Starting SY 2022*

Desktop Publishing courses integrate the knowledge and skills learning in word processing with the concepts, procedures and application of desktop publishing. Students learn to format, create and proofread brochures, programs, newsletters, web pages, presentations and manuscripts.

### **11153A001 Digital Media Design and Production CTE Course**

*Available Starting SY 2022*

Digital Media Design and Production courses teach students the fundamentals of graphic design and production and provide students with the opportunity to apply these principles to printed media, digital presentation media, and interactive media.

### **11154A001 Graphic Communications I CTE Course**

*Available Starting SY 2011*

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

## 11 Communication and Audio/Visual Technology

### 11154A002      **Graphic Communications II**

**CTE Course**

*Available Starting SY 2011*

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

### 11154A003      **Beginning Graphic Communication**

**CTE Course**

*Available Starting SY 2012*

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

### 11155A001      **Commercial & Advertising Art I**

**CTE Course**

*Available Starting SY 2011*

This course is designed to provide students with the skills needed for a career in the fields of advertising, commercial art, graphic design, web site development, and graphic illustrator. Students learn to apply artistic design and layout principles along with text, graphics, drawing, rendering, sound, video, and 2D/3D animation integration to develop various print, video, and digital products. Students use hardware and software programs to create, manipulate, color, paint, and layer scanned images, computer graphics, and original artwork. Students use hardware and software to capture, edit, create, and compress audio and video clips. Students use animation and 2D/3D hardware and software to create animated text, graphics, and images. Students apply artistic techniques to design and create advertisements, displays, publications, technical illustrations, marketing brochures, logos, trademarks, packaging, video graphics, and computer-generated media.

## 11 Communication and Audio/Visual Technology

### 11155A002 Commercial & Advertising Art II

CTE Course

*Available Starting SY 2011*

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

### 11156A001 Photography and Printing Technology

CTE Course

*Available Starting SY 2022*

Photography and Printing Technology courses expose students to the tools, materials and processes involved in mass production of photography and printing. Types of printing covered in the course may include intaglio, relief, planographic, screen processes printing, silk screening, serigraphy processes and thermograph. Additional topics may include the use of cameras, composition, imposition, presswork, and computer aided publishing.

### 11998A001 Broadcast Technology Workplace Experience

CTE Course

*Available Starting SY 2021*

Broadcast Technology Workplace Experience courses provide students with work experience in a field related to communication or audio/visual technology. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

## 11 Communication and Audio/Visual Technology

### **11998A002      Arts, Audio/Video Technology & Communications Workplace Experience**

**CTE Course**

*Available Starting SY 2022*

Arts, Audio/Video Technology & Communications Workplace Experience courses provide work experience in fields related to the Arts, Audio/Video Technology & Communications cluster. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### **11998A003      Journalism Workplace Experience**

**CTE Course**

*Available Starting SY 2025*

Journalism Workplace Experience courses provide students with work experience in a field related to journalism. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week involving further study of the field, discussion of relevant topics that are responsive to the workplace experience, and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs, including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

## 12 Business and Marketing

### **12001A001 Business and Technology Concepts**

**CTE Course**

*Available Starting SY 2011*

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

### **12002A001 Business Technology and Procedures**

**CTE Course**

*Available SY 2011 - 2020*

Business Technology and Procedures is a course that prepares students for entry level employment in a technology-based office setting. Integrated software applications will be included in this course. Instruction will focus on office etiquette, office management, telephone and communications procedures, time management, records management, and proper business behavior and attire. Students will perform clerical duties, create, edit and correct documents, records and files, perform information processing activities (e.g. spreadsheets, database entry, desktop publishing) and prepare documents using presentation software. Students will discuss appropriate procedures for receiving visitors, patients or clients, and organize, schedule and plan meetings. In addition, students will file materials manually and electronically, make travel arrangements, perform financial activities, process mail, transmit messages electronically, and maintain office supplies and equipment. Students will organize and plan office activities, compose and distribute meeting notes and reports, answer routine correspondence, input information from voice recordings; conduct research using the intranet and/or internet, and supervise and train other employees. Students will apply proper grammar, punctuation, spelling and proofreading skills. Accuracy will be emphasized. Students will apply new skills as well as skills learned in other courses to complete a series of realistic office assignments or participate in an office workbased learning experience. Workplace skills as well as communication skills (thinking, listening, composing, revising, editing, and speaking) will be taught and integrated throughout this course.

## 12 Business and Marketing

### **12005A001      Keyboarding and Formatting**

**CTE Course**

*Available Starting SY 2011*

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

### **12007A001      Recordkeeping**

**CTE Course**

*Available Starting SY 2011*

Develops understanding of and skill in maintaining accurate records; includes skills used in everyday business activities both for personal and professional use; provides an opportunity to develop skills related to personal financial management as well as budgeting, financial planning, cashier's records, handling of money, and tasks common to simple office practices.

### **12008A001      Organizational Behavior**

**CTE Course**

*Available Starting SY 2023*

Organizational Behavior courses provide students with and introduction to explores factors that influence the way members of an organization behave. Topics include reactions of people to individual and cultural differences, perceptions, attitudes, emotions, learning and reinforcement, managing diversity, decision-making, relationship management, performance, group/team relationships, leadership, structure and control, problems of motivation and performance, conflict and negotiations.

### **12009A001      Business Communications**

**CTE Course**

*Available Starting SY 2021*

Business Communications courses help students to develop an understanding and appreciation for effective communication in business situations and environments. Emphasis is placed on all phases of communication: speaking, listening, thinking, responding, reading, writing, communicating nonverbally, and utilizing technology for communication. Business communication functions, processes, and applications in the context of business may be practiced through problem-based projects and realworld application.

## 12 Business and Marketing

### **12048A001 Human Resources Workplace Experience**

**CTE Course**

*Available Starting SY 2021*

Human Resources Workplace Experience courses provide students with work experience in fields related to human resources. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### **12048A002 Administrative Assistant Workplace Experience**

**CTE Course**

*Available Starting SY 2021*

Administrative Assistant Workplace Experience courses provide students with work experience in fields related to business administration assisting. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### **12051A001 Introductory Business**

**CTE Course**

*Available Starting SY 2017*

Introductory Business courses survey an array of topics and concepts related to the field of business. These courses introduce business concepts such as banking and finance, the role of government in business, consumerism, credit, investment, and management. They usually provide a brief overview of the American economic system and corporate organization. Introductory Business courses may also expose students to the varied opportunities in secretarial, accounting, management, and related fields.

### **12052A001 Business Management**

**CTE Course**

*Available Starting SY 2015*

Business Management courses acquaint students with management opportunities and effective human relations. These courses provide students with the skills to perform planning, staffing, financing, and controlling functions within a business. In addition, they usually provide a macro-level study of the business world, including business structure and finance, and the interconnections among industry, government, and the global economy. The course may also emphasize problem-based, real-world applications of business concepts and use accounting concepts to formulate, analyze, and evaluate business decisions.

## 12 Business and Marketing

### **12053A001 Entrepreneurship**

**CTE Course**

*Available Starting SY 2011*

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

### **12054A001 Business Law**

**CTE Course**

*Available Starting SY 2011*

Introduces law and the origins and necessity of the legal system; provides insight into the evolution and development of laws that govern business in our society; develops an understanding of how organization and operation of the legal system impact business; develops an understanding of rights and duties within the business environment; and includes contractual responsibility, protection of individual rights in legal relationships relative to warranties, product liability, secured and unsecured debts, negotiable instruments, agencies, employer-employee relations, property ownership and transfer, landlord and tenant, wills and estates, community property, social security, and taxation.

### **12055A001 Service-Oriented Marketing**

**CTE Course**

*Available SY 2011 - 2020*

This course explores the basic principles of marketing such as the creation of concepts, strategies, and the development of marketing plans. Students learn about the components of the marketing mix, target marketing, sponsorship, event marketing, promotions, proposals, and execution of planning. This course emphasizes strong decision-making, critical thinking, and collaborative skills to complete group marketing projects throughout the semester. Students will be challenged to create new marketing ideas as they analyze current marketing trends. Students will also explore the legal aspects of these industries. Real life projects allow students to demonstrate their understanding of these areas. This course will examine the impact of marketing in our everyday lives, as well as teach many critical business concepts to ready students for a career in the area of marketing.

### **12055A002 Business Principles and Management**

**CTE Course**

*Available Starting SY 2020*

Business Principles and Management courses are designed to provide students with an understanding of the American business system, its organizations, and its management. These courses examine the various leadership and management styles of a variety of successful business organizations, large or small.

## 12 Business and Marketing

### **12056A001 International Business and Marketing**

**CTE Course**

*Available Starting SY 2019*

International Business and Marketing courses examine business management and administration in a global economy. Topics covered in this course typically include the principles and processes of export sales, trade controls, foreign operations and related problems, monetary issues, international business and policy, and applications of doing business in specific countries and markets.

### **12058A001 Human Resources Management**

**CTE Course**

*Available Starting SY 2019*

Human Resources Management courses provide students with an understanding of the effective use of interpersonal skills in achieving the goals of an organization.

### **12060A001 Business Ethics**

**CTE Course**

*Available Starting SY 2021*

Business Ethics courses focus on the study of ethical principles and the application of those principles to situations relevant to decision-making in the professional and business worlds.

### **12098A001 Business Management Workplace Experience**

**CTE Course**

*Available Starting SY 2021*

Business Management Workplace Experience courses provide students with work experience in fields related to business management. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

## 12 Business and Marketing

### **12098A002 Business, Management & Administration Workplace Experience CTE Course**

*Available Starting SY 2022*

Business, Management & Administration Workplace Experience courses provide work experience in fields related to the Business, Management & Administration cluster. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### **12101A001 Banking and Finance CTE Course**

*Available Starting SY 2020*

Banking and Finance courses provide students with an overview of the American monetary and banking system as well as types of financial institutions and the services and products that they offer. Course content may include government regulations; checking, savings, and money market accounts; loans; investments; and negotiable instruments.

### **12102A001 Banking CTE Course**

*Available Starting SY 2020*

Banking courses are similar to Banking and Finance courses, but they focus specifically on banking. These courses may also address examining and applying the methods used for measuring the financial performance of banks in addition to examining specialized brokerage products, current issues, and future trends in banking.

### **12103A001 Finance CTE Course**

*Available Starting SY 2020*

Finance courses are similar to Banking and Finance courses, but they focus specifically on finance, addressing how businesses raise, distribute, and use financial resources while managing risk. Course content typically involves modeling financial decisions (such as borrowing, selling equity or stock, lending or investing) typically undertaken by businesses.

## 12 Business and Marketing

### **12104A001      Accounting I**

**CTE Course**

*Available Starting SY 2011*

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

### **12104A002      Accounting II**

**CTE Course**

*Available Starting SY 2011*

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

### **12105A001      Business Economics**

**CTE Course**

*Available Starting SY 2020*

Business Economics courses integrate economic principles (such as free market economy, consumerism, and the role of American government within the economic system) with entrepreneurship/business concepts (such as marketing principles, business law, and risk).

### **12108A001      Cost Accounting**

**CTE Course**

*Available Starting SY 2021*

Cost Accounting courses introduce students to the accounting concepts of manufacturing systems. In addition to job order and process costing systems, these courses emphasize profit planning and control programs.

## 12 Business and Marketing

### **12109A001      Income Tax Accounting**

**CTE Course**

*Available Starting SY 2021*

Income Tax Accounting courses introduce students to and expand their knowledge of the fundamental accounting principles and procedures used in businesses through integrating and using accounting-related software and information systems. These courses focus on federal, state, and local business tax laws; business tax accounting methods; and the preparation of business tax forms.

### **12110A001      Payroll Accounting**

**CTE Course**

*Available Starting SY 2021*

Payroll Accounting courses introduce students to and expand their knowledge of the fundamental accounting principles and procedures related to payroll transactions for businesses. These courses typically emphasize computing wages, social security taxes, income tax withholding, unemployment taxes, and recording payroll transactions while providing students with experience in preparing all the necessary monthly, quarterly, and annual reports.

### **12111A001      Financial Accounting**

**CTE Course**

*Available Starting SY 2022*

Financial Accounting courses introduce students to the principles and concepts of financial accounting that produces summary financial statements primarily for users external to a business. Topics include preparation, interpretation, and analyses of financial records and statements; the accounting cycle; current and long-term liabilities and owners' equity; and the accounting of assets.

### **12148A001      Finance Workplace Experience**

**CTE Course**

*Available Starting SY 2021*

Finance Workplace Experience courses provide students with work experience in fields related to finance. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

## 12 Business and Marketing

### 12148A002      **Accounting Workplace Experience**

**CTE Course**

*Available Starting SY 2021*

Accounting Workplace Experience courses provide students with work experience in fields related to finance. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### 12148A003      **Finance Cluster Workplace Experience**

**CTE Course**

*Available Starting SY 2022*

Finance Cluster Workplace Experience courses provide work experience in fields related to the Finance cluster. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### 12152A001      **Advanced Marketing**

**CTE Course**

*Available Starting SY 2011*

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

## 12 Business and Marketing

### 12153A001 Fashion Merchandising

CTE Course

*Available Starting SY 2011*

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

### 12154A001 Real Estate

CTE Course

*Available Starting SY 2022*

Real Estate courses are designed to prepare students for a career in real estate and for the licensing exam. In compliance with Section 5-27(a)(5) of the Real Estate License Act of 2000, the course must include 75 hours of instruction in real estate including at least 15 hours of situational and case studies presented in the classroom or by live, interactive webinar or online distance education. Topics should include principles of real property law, interests, and forms of ownership; contract agreements; taxes; property management, financing; appraisal; licensing requirements and structure; agency law; legal issues in real estate brokerage; required disclosures; brokerage agreement facts and practices; comparative market analysis; and any additional content as defined by the IDFPR. Content must be taught by an IDFPR-approved real estate education provider and instructor.

### 12159A001 Hospitality & Tourism Marketing

CTE Course

*Available Starting SY 2019*

Marketing—Hospitality/Tourism courses typically cover the same scope of topics as Marketing—Comprehensive courses (purchasing and distribution systems, advertising, display and sales, management, entrepreneurship, and so on) but do so with particular attention to the travel, tourism, and lodging industry. In keeping with the focus on this field, topics include the unique characteristics and functions of travel services and hotel/motel operations.

### 12162A001 Social Media Marketing

CTE Course

*Available Starting SY 2019*

Social Media Marketing courses address social media as a marketing tool and emphasize social media tools, social media messages, and search engine optimization. Topics may include, but are not limited to, marketing information management (including marketing research), market planning, channel management, sales, promotion, product/service management, and pricing.

## 12 Business and Marketing

### 12163A001 Sports and Entertainment Marketing

CTE Course

*Available Starting SY 2019*

Sports and Entertainment Marketing courses introduce students to and help them refine marketing and management functions and tasks that can be applied in amateur or professional sports or sporting events, entertainment or entertainment events, and the sales or rental of supplies and equipment.

### 12164A001 Product-Oriented Marketing

CTE Course

*Available SY 2011 - 2020*

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

### 12167A001 Product-Oriented Marketing

CTE Course

*Available Starting SY 2021*

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

### 12167A002 Service-Oriented Marketing

CTE Course

*Available Starting SY 2021*

This course explores the basic principles of marketing such as the creation of concepts, strategies, and the development of marketing plans. Students learn about the components of the marketing mix, target marketing, sponsorship, event marketing, promotions, proposals, and execution of planning. This course emphasizes strong decision -making, critical thinking, and collaborative skills to complete group marketing projects throughout the semester. Students will be challenged to create new marketing ideas as they analyze current marketing trends. Students will also explore the legal aspects of these industries. Real life projects allow students to demonstrate their understanding of these areas. This course will examine the impact of marketing in our everyday lives, as well as teach many critical business concepts to ready students for a career in the area of marketing.

## 12 Business and Marketing

### **12168A001      Agricultural Commodity Marketing**

**CTE Course**

*Available Starting SY 2021*

Agricultural Commodity Marketing courses investigate the meaning and methods of marketing as related to agricultural commodities, products and services, and agricultural goods in domestic and international markets. Topics typically include appropriate market research; benefit/cost analysis of marketing; risk management, futures and options contracts, relationship between cash and futures, hedging strategies, commodity price behavior and methods of targeted agricultural marketing in domestic and international markets. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### **12169A001      Social Media Marketing**

**CTE Course**

*Available Starting SY 2021*

Social Media Marketing courses address social media as a marketing tool and emphasize social media tools, social media messages, and search engine optimization. Topics may include, but are not limited to, marketing information management (including marketing research), market planning, channel management, sales, promotion, product/service management, and pricing.

### **12198A001      Marketing Workplace Experience**

**CTE Course**

*Available Starting SY 2021*

Marketing Workplace Experience courses provide students with work experience in fields related to marketing. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

## 12 Business and Marketing

### **12198A002 Marketing Cluster Workplace Experience**

**CTE Course**

*Available Starting SY 2022*

Marketing Workplace Experience courses provide work experience in fields related to the Marketing cluster. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### **12198A003 Real Estate Workplace Experience**

**CTE Course**

*Available Starting SY 2023*

Real Estate Workplace Experience Courses provide students with work experience in fields related to real estate. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### **12202A001 Principles of Selling**

**CTE Course**

*Available Starting SY 2022*

Principles of Selling courses provide students with the knowledge and opportunity to develop in-depth sales competencies. Course content typically includes types of selling, steps in a sale, sales strategies, and interpersonal skills and techniques.

### **12990A002 AP Business with Personal Finance (CTE)**

**CTE Course**

*Available Starting SY 2026*

AP Business with Personal Finance introduces students to core business principles while building essential personal money management skills. Students learn how businesses operate, make decisions, and create value, alongside strategies for budgeting, saving, investing, and managing credit. The course highlights the connection between business knowledge and personal financial success.

## 12 Business and Marketing

**12998A001 Entrepreneurial Workplace Experience**

**CTE Course**

*Available Starting SY 2021*

Entrepreneurial Workplace Experience courses provide students with work experience in fields related to entrepreneurship. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

## 13 Manufacturing

### **13001A001      Exploration of Manufacturing Occupations      CTE Course**

*Available Starting SY 2019*

Exploration of Manufacturing Occupations courses introduce and expose students to the career opportunities pertaining to the processing and production of goods. Course topics vary and may include (but are not limited to) systems pertinent to the manufacturing process, properties of various raw materials, and the methods used to transform materials into consumer products. Course activities depend upon the careers being explored; course topics may include entrepreneurship, labor laws, and customer service.

### **13004A001      Occupational Safety      CTE Course**

*Available Starting SY 2021*

Occupational Safety courses provide students with instruction in safe operating procedures related to various trades. Course topics may include the importance of standard operation procedures, agencies and regulations related to occupational safety and hazard prevention, and the dangers of particular materials. Course topics and materials should be relevant to the relevant industries and careers within the program(s) offered.

### **13052A001      Production Technology      CTE Course**

*Available Starting SY 2011*

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

### **13055A001      Precision Metal Production I      CTE Course**

*Available Starting SY 2011*

This course offers a planned sequence of learning experiences which provide students with the opportunities to develop competencies needed for employment in a variety of manufacturing-related occupations. This course introduces students to the skills common to many occupations, such as applying safety practices, selecting materials, performing bench work operations, performing precision measurement, performing layouts, performing housekeeping and recordkeeping activities, and operating a variety of tools used for separating, forming, and combining materials.

## 13 Manufacturing

### **13055A002 Precision Metal Production II**

**CTE Course**

*Available Starting SY 2011*

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

### **13098A001 Cabinetmaking Workplace Experience**

**CTE Course**

*Available Starting SY 2021*

Cabinetmaking Workplace Experience courses provide students with work experience in fields related to manufacturing processing and production. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### **13102A001 Mechatronics**

**CTE Course**

*Available Starting SY 2011*

Electro-Mechanical Systems courses provide students with instruction and experience in components and equipment that use electricity and the power of physical forces. Students gain an understanding of the principles of electricity and mechanics and their application to gears, including hydraulic/pneumatic equipment, cams, levers, circuits, and other devices used in the manufacturing process or within manufactured goods.

### **13148A001 Machine Tool Technology Workplace Experience**

**CTE Course**

*Available Starting SY 2021*

Machine Tool Technology Workplace Experience courses provide students with work experience in fields related to manufacturing systems and/or research. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

## 13 Manufacturing

### **13203A001      Machine Tool Technology/Machinist I      CTE Course**

*Available Starting SY 2011*

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

### **13203A002      Machine Tool Technology/Machinist II      CTE Course**

*Available Starting SY 2011*

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

### **13203A005      Machine Shop Technology I      CTE Course**

*Available Starting SY 2011*

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

### **13203A006      Machine Shop Technology II      CTE Course**

*Available Starting SY 2011*

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

### **13203A007      Beginning Machining      CTE Course**

*Available Starting SY 2012*

Beginning Machining course enable students to create metal parts using various machine tools and equipment. Course content may include interpreting specifications for machines using blueprints, sketches, or descriptions of parts; preparing and using lathes, milling machines, shapers, and grinders with skill, safety, and precision.

## 13 Manufacturing

### **13205A001 Sheet Metal Technology I**

**CTE Course**

*Available Starting SY 2011*

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

### **13205A002 Sheet Metal Technology II**

**CTE Course**

*Available Starting SY 2011*

This course is a continuation of and builds on the skills and concepts introduced in Sheet Metal Technology I. In this course students are introduced to precision measurement, power assisted sheet metal forming equipment, constructing ductwork, hand and power tools specifically designed for sheet metal fabrication, sheet metal production equipment, and advanced welding and brazing.

### **13207A001 Welding Technology I**

**CTE Course**

*Available Starting SY 2011*

This course assists students in gaining the knowledge and developing the basic skills needed to be successful in welding technology. Units of instruction include arc, TIG and MIG welding, metallurgy, cutting metal using arc, plasma, and oxy-gas. In addition, students learn the basics of blueprint reading, precision measuring, layout, and production process planning.

### **13207A002 Welding Technology II**

**CTE Course**

*Available Starting SY 2011*

This course builds on the skills and concepts introduced in Welding Technology I and provides more in-depth skill development in various types of welding including horizontal, vertical, overhead, and circular techniques. Students also explore the use of robotic and automated production welding.

### **13207A003 Beginning Welding**

**CTE Course**

*Available Starting SY 2012*

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

## 13 Manufacturing

### 13248A001 Sheet-working Workplace Experience

CTE Course

*Available Starting SY 2021*

Sheet-working Workplace Experience courses provide students with work experience in the welding, machine technologies, or metalwork fields. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### 13248A002 Welding Workplace Experience

CTE Course

*Available Starting SY 2021*

Welding Workplace Experience courses provide students with work experience in the welding, machine technologies, or metalwork fields. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### 13302A001 Industrial Maintenance I

CTE Course

*Available Starting SY 2011*

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

### 13302A002 Industrial Maintenance II

CTE Course

*Available Starting SY 2011*

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

## 13 Manufacturing

### **13348A001 Computer Installation and Repair Workplace Experience CTE Course**

*Available Starting SY 2021*

Computer Installation and Repair Workplace Experience courses provide students with work experience in the fields involving repair, supported by classroom attendance and discussion. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### **13998A001 Industrial Electronics Workplace Experience CTE Course**

*Available Starting SY 2021*

Industrial Electronics Workplace Experience courses provide students with work experience in fields involving manufacturing, supported by classroom attendance and discussion. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### **13998A002 Manufacturing Workplace Experience CTE Course**

*Available Starting SY 2022*

Manufacturing Workplace Experience courses provide work experience in fields related to the Manufacturing cluster. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

## 14 Health Care Sciences

### **14001A001            Orientation to Diversified Health Occupations**

**CTE Course**

*Available Starting SY 2011*

The course should expose students to the variety of opportunities available within the health care industry (e.g., such as nursing, therapy, vision and dental care, administrative services, and lab technology), which should include classroom and community-based activities. The main purpose of this course is to assist students in further development of their self-concept and in matching personal abilities and interest to a tentative career choice. The suggested course content should provide in-depth information into health occupations careers and trends, the occupational and educational opportunities, and the educational, physical, emotional, and attitudinal requirements. Courses should include content to prepare students for successful completion of the Occupational Safety and Health Administration-10 hour for General Industry.

### **14002A001            Health Occupations Related Skills**

**CTE Course**

*Available Starting SY 2011*

The course provides students with a core of knowledge to the health care industry and helps refine their health care-related knowledge and skills. This core of knowledge will develop the students' cognitive and affective skills in formulating a strong foundation for entry-level skill development. Topics covered usually include (but are not limited to) an overview of health care delivery; patient care, including assessment of vital signs, body mechanics, and diet; anatomy and physiology; identification and use of medical equipment and supplies; medical terminology; hygiene and disease prevention; first aid and CPR procedures; laboratory procedures; and ethical and legal responsibilities.

### **14002A002            Health Occupations Introductory Skill Development**

**CTE Course**

*Available Starting SY 2011*

This course provides students with a core of knowledge of the health care industry and helps refine their health care-related knowledge and competencies/skills. Students will develop cognitive and effective skills and formulate a strong foundation for introductory skill development. Competencies taught usually include (but are not limited to) medical terminology; health care industry and culture; health care delivery practices; health care industry ethics; health professions licensure; emergency response; health care confidentiality; health care personnel and roles; health care sanitation; and health care rules and regulations as defined in the Illinois Recommended Technical and Essential Employability Competencies for College and Career Pathway Endorsements.

## 14 Health Care Sciences

### **14002A003 Health Occupations Advanced Skill Development**

**CTE Course**

*Available Starting SY 2011*

This course builds on the competencies developed in the Health Occupations Introductory Skills course. Students will develop cognitive and effective skills and formulate a strong foundation for advanced level skill development. The course provides a sequence of organized learning experiences and skills to prepare a person to recognize the signs and symptoms of illness, injury, and disease and to determine appropriate primary, secondary and tertiary care; to begin the approved and appropriate life -support procedures, such as first aid and cardiopulmonary resuscitation (CPR); to communicate effectively with healthcare personnel and patients; and to properly document health care delivery procedures and outcomes. The course should include skills to prepare the student for an allied health occupation.

### **14003A001 Medical Law and Ethics**

**CTE Course**

*Available Starting SY 2021*

Medical Law and Ethics courses introduce students to the principles of medical law, medical ethics, and bioethics. These courses emphasize the function of law and ethical issues as it applies to the medical environment.

### **14051A001 Nursing Assistant I**

**CTE Course**

*Available Starting SY 2011*

The course is composed of a combination of subject matter and experiences designed to perform tasks of individuals receiving nursing services. The student learns those competencies needed to perform as a nurse assistant under the direction of the registered nurse. The units of instruction should include the role of the nurse assistant while covering general health care topics; medical terminology; patients/clients and their environment; special feeding techniques; psychological support and, in long-term and terminal illness, death and dying (e.g., chronically ill, children, new mothers, and so on); and all other basic nursing skills. Topics covered typically include normal growth and development; feeding, transporting patients, hygiene, and disease prevention; basic pharmacology; first aid and CPR; observing and reporting; care of equipment and supplies; doctor, nurse, and patient relationships and roles; procedure and policies; medical and professional ethics; and care of various kinds of patients. In order to have an approved nurse assistant program (one in which the students are eligible to sit for the certifying exam), the program must be approved by the Illinois Department of Public Health and meet all applicable requirements contained in 77 Illinois Administrative Code Part 395.

## 14 Health Care Sciences

### 14052A001 Nursing-LPN

CTE Course

*Available SY 2011 - 2021*

The course is composed of a combination of subject matter and learning activities designed to prepare a person to perform as a practical nurse under the direction of the physician or professional nurse. LPN courses offer the knowledge and experience needed to provide nursing care for patients of all ages, in various stages of sickness or health, and with a variety of disease conditions. Through classroom, laboratory, and clinical experiences, the student is exposed to the following units of instruction: interpersonal relationships; communications; physiological, psychological, and sociological principles and needs of patients/clients; basic skills; nutrition and special dietary content. Additional topics covered may include community health, nutrition, drug therapy and administration, and mental illness. This program must meet the approval requirements of the Illinois Department of Financial and Professional Regulation.

### 14053A001 Home Health Aide

CTE Course

*Available Starting SY 2011*

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

### 14054A001 Dental Assistant

CTE Course

*Available Starting SY 2011*

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

## 14 Health Care Sciences

### 14055A001      **Emergency Medical Technician**

**CTE Course**

*Available Starting SY 2011*

Emergency Medical Technology courses place a special emphasis on the knowledge and skills needed in medical emergencies. Topics typically include clearing airway obstructions, controlling bleeding, bandaging, methods for lifting and transporting injured persons, simple spinal immobilization, infection control, stabilizing fractures, and responding to cardiac arrest. The courses should also cover the legal and ethical responsibilities involved in dealing with medical emergencies. The Illinois Department of Public Health approves EMT training programs in the State of Illinois. Approved programs must meet or exceed the National Emergency Medical Services Education Standards for the Emergency Medical Technician and meet all other applicable requirements contained in 77 Illinois Administrative Code Part 515. To become licensed as an EMT-B in the State of Illinois or nationally certified, the student must be 18 years of age, complete a state-approved EMT program, have a current CPR-BLS for "Healthcare Provider" or equivalent credential, and pass the National Registry of Emergency Medical Technicians examination (required for national certification) or the Illinois Department of Public Health's EMT-B examination.

### 14056A001      **Surgical Technology**

**CTE Course**

*Available SY 2011 - 2021*

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

### 14057A001      **Vision Care**

**CTE Course**

*Available SY 2011 - 2021*

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

## 14 Health Care Sciences

### **14058A001      Optical Technician Assistant**

**CTE Course**

*Available SY 2011 - 2021*

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

### **14059A001      Geriatric Aide**

**CTE Course**

*Available Starting SY 2011*

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

### **14059A002      Gerontology**

**CTE Course**

*Available Starting SY 2020*

Gerontology courses provide students with knowledge and understanding of the processes of adult development and aging. Topics covered may include the study of the biological, economic, psychological, social, and health/fitness aspects of the aging process.

## 14 Health Care Sciences

### 14060A001 Physical Therapy Aide

CTE Course

*Available Starting SY 2011*

Physical Therapy Aide courses provide students with the knowledge and skills necessary to work with patients who need to achieve and maintain functional rehabilitation and to prevent malfunction or deformity. This course provides a sequence of organized learning experiences and skills designed to prepare a person to be knowledgeable of the organizational structure of the physical therapy department; relationships of anatomical structures to normal and abnormal movement (building upon the unit of body systems in an earlier course); pathophysiological conditions resulting from injury and/or disease; terminology; record keeping; interpersonal relationships; first aid; body mechanics; and uses of electricity, hot and cold packs, paraffin, whirlpool, diathermy, microwave, massage assistive and supporting devices, and therapeutic exercises and tractions. The physical therapy aide assists in implementing the plan of therapy for a patient/client as prescribed by a physician. This knowledge is necessary to perform as a physical therapy aide in hospitals, long-term care facilities and clinics under the direction of a physical therapy assistant or physical therapist. Topics covered typically include therapeutic exercises and activities (such as stretching and strengthening), how to train patients to perform the activities of daily living, the use of special equipment, and evaluation of patient progress.

### 14061A001 Respiratory Therapy

CTE Course

*Available SY 2011 - 2021*

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

### 14062A001 Sports Medicine

CTE Course

*Available Starting SY 2011*

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

## 14 Health Care Sciences

### 14063A001 Mortuary Assistant

CTE Course

*Available SY 2011 - 2020*

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

### 14063A002 Occupational Therapy Aide

CTE Course

*Available Starting SY 2011*

This course provides a sequence of organized learning experiences and skills designed to prepare a person to be knowledgeable of the organizational structure of the occupational therapy department; relationships of anatomical structures to normal and abnormal movement (building upon the unit of body systems in an earlier course); pathophysiological conditions resulting from injury and/or disease; terminology; record keeping; interpersonal relationships; first aid; body mechanics; and assist in implementing the plan of therapy for a patient/client as prescribed by a physician as directed by the occupational therapist in a hospital, long-term care facility, retirement home, or clinic. This knowledge is necessary to perform as an occupational therapy aide in hospitals, long-term care facilities, and clinics under the direction of a occupational therapy assistant or occupational therapist.

### 14063A003 Rehabilitation Aide

CTE Course

*Available Starting SY 2011*

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

## 14 Health Care Sciences

### 14063A004 Direct Support Person

CTE Course

*Available Starting SY 2025*

Direct Support Person (DSP) courses prepare individuals to assist individuals with intellectual and developmental disabilities (I/DD) with daily living skills, such as hygiene, dressing, cooking, home care, transportation, socialization, problem solving, and medication administration. DSPs are advocates for individuals with I/DD. They assist individuals to learn, grow, and have the life they desire. The DSP training is a requirement for all individuals interested in pursuing a career as a DSP with/at community-based organizations that serve and support individuals with I/DD. DSP training is designed to provide the framework for the direct care staff/employees to learn how to empower and support individuals in community residential and day programming settings within the DDD system of care. Training should align to requirements set forth by the Illinois Department of Human Services.

### 14098A001 Dental Assisting Workplace Experience

CTE Course

*Available Starting SY 2021*

Dental Assisting Workplace Experience courses provide students with work experience in fields related to dental assisting services. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### 14098A002 Pharmacy Technician Workplace Experience

CTE Course

*Available Starting SY 2021*

Pharmacy Technician Workplace Experience courses provide students with work experience in fields related to pharmacy services. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

## 14 Health Care Sciences

### **14098A003 Athletic Training Workplace Experience**

**CTE Course**

*Available Starting SY 2021*

Athletic Training Workplace Experience courses provide students with work experience in fields related to athletic training services. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### **14098A004 Physical Therapy Aide Workplace Experience**

**CTE Course**

*Available Starting SY 2021*

Physical Therapy Aide Workplace Experience courses provide students with work experience in fields related to physical therapy services. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### **14098A005 Nursing Assistant Workplace Experience**

**CTE Course**

*Available Starting SY 2021*

Nursing Assistant Workplace Experience courses provide students with work experience in fields related to nursing services. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

## 14 Health Care Sciences

### **14099A001 Survey of Psychiatric Rehabilitation**

**CTE Course**

*Available SY 2011 - 2021*

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

### **14099A002 Psychiatric Rehabilitation Skills**

**CTE Course**

*Available SY 2011 - 2021*

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

### **14099A003 Health and Safety Skills for Psychiatric Rehabilitation**

**CTE Course**

*Available SY 2011 - 2021*

This course should focus on the mental health system and related services, basic CPR, first aid, infection control, vital signs, nutrition, and safety. It is suggested that the Certified Nursing Assistant (CNA) course be given at this time as the basic foundation. The student would then become eligible upon successful completion of all of the skills and knowledge for dual certification as both a CNA and a Psychiatric Rehabilitation Services Aide (PRSA) at the end of course of study, as long as the Psychiatric Rehabilitation Services Aide Training Program meets all applicable requirements contained in 77 Illinois Administrative Code Part 395.

### **14099A004 Vocational Rehabilitation and Community Living Skills**

**CTE Course**

*Available SY 2011 - 2021*

This course should focus on the mental health system and related services, supported employment, work as therapy, job coaching, Americans with Disabilities Act, and case management for community living.

## 14 Health Care Sciences

### 14101A001 Dental Laboratory Aide

CTE Course

*Available Starting SY 2011*

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

### 14102A001 Medical Lab Technician

CTE Course

*Available Starting SY 2011*

Medical Lab Technician courses provide students with the knowledge and skills necessary for employment in health care-related laboratories. Topics include basic principles of anatomy and physiology, relevant concepts in microbiology and chemistry, and laboratory techniques (including preparation and analysis of various cultures and specimens). These courses provide a sequence of organized competencies necessary to perform tasks which include laboratory requisitions and reports; care of laboratory equipment; aseptic techniques; basic laboratory mathematics (metrics); handling of specimens; blood collection techniques; and interdepartmental relationships such as introduction to the departments of hematology, urology, serology, bacteriology, and others. The courses may also cover such components as venipuncture, EKG, and CPR procedures.

### 14103A001 Electrocardiograph (EKG) Technician

CTE Course

*Available Starting SY 2011*

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

## 14 Health Care Sciences

### **14104A001 Clinical Laboratory Assistant/Phlebotomist**

**CTE Course**

*Available Starting SY 2011*

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

### **14105A001 Radiological Technology/Technician**

**CTE Course**

*Available SY 2011 - 2021*

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

### **14148A001 Medical/Clinical Assistant Workplace Experience**

**CTE Course**

*Available Starting SY 2021*

Medical/Clinical Assistant Workplace Experience courses provide students with work experience in fields related to medical/clinical assisting services. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

## 14 Health Care Sciences

### 14148A002 ECG Workplace Experience

CTE Course

*Available Starting SY 2021*

ECG Workplace Experience courses provide students with work experience in fields related to ECG diagnostic services. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### 14148A003 EMT Workplace Experience

CTE Course

*Available Starting SY 2021*

EMT Workplace Experience courses provide students with work experience in fields related to emergency medical services. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### 14148A004 Medical Laboratory Technician Workplace Experience

CTE Course

*Available Starting SY 2021*

Medical Laboratory Technician Workplace Experience courses provide students with work experience in fields related to medical laboratory services. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

## 14 Health Care Sciences

### 14148A005 Phlebotomy Workplace Experience

CTE Course

*Available Starting SY 2021*

Phlebotomy Workplace Experience courses provide students with work experience in fields related to phlebotomy services. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### 14151A001 Medical/Clinical Assisting

CTE Course

*Available Starting SY 2011*

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

### 14152A001 Pharmacy Technician

CTE Course

*Available Starting SY 2011*

Pharmacy Technician courses emphasize the knowledge and skills necessary to assist a pharmacist or pharmacy technician. Course topics and experiences enable students to understand medical terminology, keep and maintain records, label medication, perform computer patient billing, perform stock inventory, and order supplies. These courses also emphasize pharmaceutical classification, drug interactions, and interpersonal/communication skills.

## 14 Health Care Sciences

### **14153A001 Medical Office Procedures**

**CTE Course**

*Available Starting SY 2011*

Medical Office Procedures courses expose students to clerical knowledge, abilities, and procedures as they apply to the medical field. These courses typically include (but are not limited to) topics such as medical transcription, medical insurance, financial accounting, scheduling, and patient record-keeping. Medical terminology and routine medical procedures are covered to provide a context for clerical duties.

### **14154A001 Medical Terminology**

**CTE Course**

*Available Starting SY 2011*

Medical Terminology courses students learn how to identify medical terms by analyzing their components. These courses emphasize defining medical prefixes, root words, suffixes, and abbreviations. The primary focus is on developing both oral and written skills in the language used to communicate within health care professions.

### **14156A001 Medical Coding and Transcription**

**CTE Course**

*Available Starting SY 2021*

Medical Coding and Transcription courses introduce students to the International Classification of Diseases, Clinical Modification (ICD-10) and its system of hospital codes for Current Procedural Terminology (CPT) diagnoses and procedures. These courses provide opportunities for students to practice and develop skills in the use of transcription equipment and to gain familiarity with common formats of medical terminology and reports.

### **14157A001 Health Informatics and Data Management**

**CTE Course**

*Available Starting SY 2021*

Health Informatics and Data Management courses introduce students to automated information systems in the health care delivery system. These courses teach students terminology and essential concepts of health information systems and management of data, including the purpose, content, and structure of health data; numbering and filing systems; storage and retention methods; and the construction and design of forms, records, indexes, and registers. These courses may also examine data integrity, privacy/security issues, and the purposes of accreditation and regulatory standards in developing health record practice guidelines.

## 14 Health Care Sciences

### **14198A001 Medical Insurance Coding Workplace Experience**

**CTE Course**

*Available Starting SY 2021*

Medical Insurance Coding Workplace Experience courses provide students with work experience in fields related to medical insurance coding. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### **14198A002 Health Unit Coordinator Workplace Experience**

**CTE Course**

*Available Starting SY 2021*

Health Unit Coordinator Workplace Experience courses provide students with work experience in fields related to health unit coordination. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### **14201A001 Central Supply Services**

**CTE Course**

*Available SY 2011 - 2021*

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

## 14 Health Care Sciences

### **14202A001 Medical Records Assistant**

**CTE Course**

*Available Starting SY 2011*

This course provides a sequence of organized learning experiences and skills designed to prepare an individual to assist other medical record personnel by typing, filing, and performing general office duties; organizing, analyzing, and technically evaluating health records; coding symptoms, diseases, or operations; preparing health data for input into computers; and compiling administrative and health statistics for use by public health and/or clinical health care officials under the direction of the medical records administrator or other health care administrator.

### **14203A001 Unit Coordination**

**CTE Course**

*Available Starting SY 2011*

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

### **14248A001 Health Support Services—Workplace Experience**

**CTE Course**

*Available SY 2020 - 2021*

Health Support Services—Workplace Experience courses provide students with work experience in careers related to health support services. Goals are typically set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses may include classroom activities as well, involving further study of the field or discussion regarding experiences that students encounter in the workplace.

### **14251A001 Human Body Systems**

**CTE Course**

*Available Starting SY 2011*

Human Body Systems courses provide the study of basic human anatomy and physiology, especially in relationship to human health. A central theme is research and investigation into how the body systems work together to maintain internal balance and good health. Students use models and data acquisition software to study body structure and to monitor body functions.

## 14 Health Care Sciences

### **14252A001 Principles of Biomedical Science (PLTW)**

**CTE Course**

*Available SY 2011 - 2021*

Principles of Biomedical Science courses introduce students to the broad field of biomedical science. It provides the study of human medicine, research processes, and an introduction to bioinformatics. Students investigate how various health conditions and medical treatments impact human physiology. Health conditions covered include: heart disease, diabetes, sickle cell disease, hypercholesterolemia, and infectious diseases.

### **14252A002 Biotechnology**

**CTE Course**

*Available Starting SY 2021*

Biotechnology courses involve the study of the bioprocesses of organisms, cells, and/or their components and enable students to use this knowledge to produce or refine products, procedures, and techniques. Course topics typically include laboratory measurement, monitoring, and calculation; growth and reproduction; chemistry and biology of living systems; quantitative problem-solving; data acquisition and display; and ethics. Advanced topics may include elements of biochemistry, genetics, and protein purification techniques.

### **14253A001 Pharmacology Technician**

**CTE Course**

*Available Starting SY 2011*

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

### **14253A002 Introduction to Pathophysiology and Pharmacology**

**CTE Course**

*Available Starting SY 2019*

Introduction to Pathophysiology and Pharmacology courses present the concepts of homeostasis and disease processes. Course topics and experiences enable students to relate how the human body's homeostasis is impacted by both disease and chemical substances, especially by the actions of drugs and other substances commonly used to treat diseases. Pathophysiology emphasizes various human body system disorders and the mechanisms of disease, including (but not limited to) fluid, electrolyte, and acid-base imbalances; pain; inflammation and healing; infection; and immunity. Pharmacology topics typically include (but are not limited to) the science of medication actions, sources, chemical properties, classification, uses, therapeutic effect, side-effects, adverse effects, and routes of administration. Hands-on activities, projects, and real-world problems are encouraged to attain complete comprehension.

## 14 Health Care Sciences

### 14254A001 Medical Interventions

CTE Course

*Available Starting SY 2011*

Medical Interventions courses provides opportunities to investigate how to prevent, diagnose, and treat disease. Students explore how to detect and fight infection; screen and evaluate the code in human DNA; evaluate cancer treatment options; and prevail when the organs of the body begin to fail. Through real-world cases, students are exposed to a range of interventions related to immunology, surgery, genetics, pharmacology, medical devices, and diagnostics.

### 14254A002 Basic Life Support

CTE Course

*Available Starting SY 2022*

This course trains students for CPR and basic life supporting skills and to promptly recognize several life-threatening emergencies and provide instruction consistent with emergency care practices for CPR, first aid, and covers breathing and cardiac emergencies - including CPR, AED, and obstructed airway - for adult, child, and infant victims. The course topics could also include training to prepare students for blood-borne pathogen certification.

### 14255A001 Principles of Biomedical Sciences

CTE Course

*Available Starting SY 2021*

Principles of Biomedical Science courses introduce students to the broad field of biomedical science. It provides the study of human medicine, research processes, and an introduction to bioinformatics. Students investigate how various health conditions and medical treatments impact human physiology.

### 14255A002 Biomedical Innovation

CTE Course

*Available Starting SY 2021*

Biomedical Innovation courses help students apply their knowledge and skills to answer questions or solve problems related to the biomedical sciences. These courses help students design innovative solutions for emerging health challenges and address topics such as clinical medicine, human physiology, medical innovation, water contamination, public health, molecular biology, and forensic autopsy, and public health. These courses may also provide students with the opportunity to work with a mentor or advisor from a university or hospital, physician's office, or industry. Students may design and complete an independent project as part of the course.

## 14 Health Care Sciences

### 14298A001 Allied Health Workplace Experience

CTE Course

*Available Starting SY 2021*

Allied Health Workplace Experience courses provide students with work experience in fields involving the general allied health sciences. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### 14298A002 Community Health Workplace Experience

CTE Course

*Available Starting SY 2025*

Community Health Workplace Experience courses provide students with work experience in a field related to community health. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week involving further study of the field, discussion of relevant topics that are responsive to the workplace experience, and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs, including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### 14299A001 Biomedical Innovations (PLTW)

CTE Course

*Available SY 2011 - 2021*

Biomedical Innovations courses provide the ability to design innovative solutions for the current pressing health challenges. Students apply knowledge and skills while conducting experiments related to biomedical sciences. Students address topics ranging from public health and biomedical engineering to clinical medicine and physiology. Students have the opportunity to work on an independent design project with a mentor or advisor from a university, medical facility, health care industry, or biomedical research institution. Students will be expected to make a presentation of their work to an adult audience that may include representatives from the local community or the school's PLTW partnership team.

## 14 Health Care Sciences

### **14998A001 Health Occupations Cooperative Education**

**CTE Course**

*Available SY 2011 - 2021*

The course provides students with work experience in the health care industry. This course is designed for students interested in pursuing careers in health occupations. Students are released from school for their cooperative education work experience and participate in 200 minutes per week of related classroom instruction. Classroom instruction focuses on providing students with job survival skills, career exploration skills related to the job, and improving students' abilities to interact positively with others. For skills related to the job, refer to industry standards of the desired career. Goals are typically set cooperatively by the student, teacher, and employer (students may be paid or unpaid). These courses may include classroom activities as well, involving further study of the field or discussion regarding experiences that students encounter in the workplace.

### **14998A002 Health Science Workplace Experience**

**CTE Course**

*Available Starting SY 2022*

Health Science Workplace Experience courses provide work experience in fields related to the Health Science cluster. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### **64001A001 Medical Detectives (PLTW GTT)**

**CTE Course**

*Available SY 2014 - 2021*

Students explore the biomedical sciences through hands-on projects and labs that require the students to solve a variety of medical mysteries. Students investigate medical careers, vital signs, diagnosis and treatment of diseases, as well as human body systems such as the nervous system. Genetic testing for hereditary diseases and DNA crime scene analysis put the students in the place of real life medical detectives.

## 15 Public, Protective, and Government Service

### **15001A001 Exploration of Public Service Careers**

**CTE Course**

*Available Starting SY 2019*

Exploration of Public Service Careers courses expose students to the duties, responsibilities, requirements, and career opportunities within public service. Course topics vary and may include (but are not limited to) protective services; correction, judicial, and probation services; fire protection and fire fighting; public administration; and social work. Course activities depend upon the career clusters that students explore.

### **15051A003 Law Enforcement I**

**CTE Course**

*Available SY 2011 - 2020*

This course is designed to prepare students to enter the fields of law enforcement and the criminal justice system. Instruction includes the history of law enforcement and the legal system, report writing and recordkeeping, criminal investigation techniques, and routine police procedures. Students learn how to use communications and dispatch equipment, perform proper search and seizure techniques, conduct basic criminal investigations, and execute correct pursuit and arrest procedures. Instruction also includes patrolling techniques, private security operations, traffic investigations, and community relations.

### **15051A004 Law Enforcement II**

**CTE Course**

*Available SY 2011 - 2020*

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

### **15051A005 Security I**

**CTE Course**

*Available SY 2011 - 2020*

This course is designed to prepare students to enter the fields of law enforcement and the criminal justice system. Instruction includes the history of law enforcement and the legal system, report writing and recordkeeping, criminal investigation techniques, and routine police procedures. Students learn how to use communications and dispatch equipment, perform proper search and seizure techniques, conduct basic criminal investigations, and execute correct pursuit and arrest procedures. Instruction also includes patrolling techniques, private security operations, traffic investigations, and community relations.

## 15 Public, Protective, and Government Service

### 15051A006 Security II

CTE Course

*Available SY 2011 - 2020*

This course provides learning activities to assist students in understanding the differences and similarities between the criminal justice system and security and protective services, incident response techniques, crime prevention, security operations, and crime in the workplace. Learning activities emphasize the development of more advanced knowledge and skill than those provided in Security I.

### 15051A007 Criminal Justice

CTE Course

*Available Starting SY 2020*

Criminal Justice courses train students to understand and apply the principles and procedures essential to the overall U.S. criminal justice system. Course topics vary and may include, but are not limited to, structure, history and philosophy of the federal, state, county, and municipal court systems; judicial appointment processes; arrest-to-sentencing sequences; laboratory, forensic, and trial procedure; probation and parole; state and federal correctional facilities; and system interrelationships with law enforcement agencies.

### 15052A001 Corrections

CTE Course

*Available Starting SY 2015*

This course will provide instruction regarding the principles and techniques used by institutions that incarcerate, rehabilitate, and monitor people accused or convicted of crimes. Course topics vary and may include (but are not limited to) protective services; correction, judicial, and probation service; public administration; and social work.

### 15053A001 Criminology

CTE Course

*Available SY 2019 - 2021*

Criminology courses provide students an overview of the field and the theories of criminology. These courses explore crime, criminal behavior, and the law. Topics typically covered may include sociological and psychological motivations for crime, major criminology theories, patterns and behaviors, crime prevention, law enforcement, and criminal justice systems, among others.

### 15054A001 Law Enforcement I

CTE Course

*Available Starting SY 2021*

This course is designed to prepare students to enter the fields of law enforcement and the criminal justice system. Instruction includes the history of law enforcement and the legal system, report writing and record-keeping, criminal investigation techniques, and routine police procedures. Students learn how to use communications and dispatch equipment, perform proper search and seizure techniques, conduct basic criminal investigations, and execute correct pursuit and arrest procedures. Instruction also includes patrolling techniques, private security operations, traffic investigations, and community relations.

## 15 Public, Protective, and Government Service

### **15054A002 Law Enforcement II**

**CTE Course**

*Available Starting SY 2021*

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

### **15055A001 Forensic Science**

**CTE Course**

*Available Starting SY 2021*

Forensic Science courses provide an overview of the theoretical understanding and practical application of forensic science techniques. These courses explore the applied science and the fields of biology, chemistry, physics, and crime science investigation. Topics typically covered may include genetics, anthropology, toxicology, entomology, ballistics, pathology, computer forensics, fire debris and trace evidence among others.

### **15056A001 Crime Scene Management**

**CTE Course**

*Available Starting SY 2021*

Crime Scene Management courses provide the skills and knowledge necessary for criminalistics - the securing, investigating, and processing of a crime scene. Topics may include, but are not limited to, evidence collection and preservation, finger printing, sketching, securing and photographing the crime scene, and chain of custody.

### **15057A001 Criminal Law and Procedures**

**CTE Course**

*Available Starting SY 2021*

Criminal Law and Procedures courses provide students with knowledge and skills related to understanding criminal law, constitutional amendments, and due process. Course content may include specific types of crimes, such as vehicle crimes, personal crimes, cyber crimes, and drug crimes.

### **15058A001 Ethics in Criminal Justice**

**CTE Course**

*Available Starting SY 2021*

Ethics in Criminal Justice courses cover ethical standards and codes of professional behavior for police officers and others placed in positions of public trust. Topics may include use of force, gratuities, intra- and inter-agency conduct, integrity, ethical necessity of due process, and on-duty and off-duty conduct.

## 15 Public, Protective, and Government Service

### 15098A001 Law Enforcement Workplace Experience

CTE Course

*Available Starting SY 2021*

Law Enforcement Workplace Experience courses provide work experience in fields related to law enforcement. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### 15101A001 Public Safety

CTE Course

*Available Starting SY 2021*

Public Safety courses introduce students to the field of public safety and extend their knowledge and skills pertaining to the safety and security of homes, workplaces, and the community. These courses cover such topics as policing, law enforcement, emergency service, and private security and corrections and may cover all or a subset of these services.

### 15102A001 Security Services

CTE Course

*Available Starting SY 2020*

Security Services courses provide instruction regarding the safety and security of buildings and facilities and may extend these lessons to include the security and safety of one's self and other human beings.

### 15104A001 Public Safety Telecommunications

CTE Course

*Available Starting SY 2021*

Public Safety Telecommunications courses provide students with the skills and knowledge necessary to obtain national certification in Public Safety Telecommunications and/or employment as a 911 telecommunicator. Course content may include, but is not limited to, understanding standard federal, state, and local telecommunication operating procedures; functions, terminology, and types of telecommunication equipment; malfunctions and maintenance agreements; proper and correct telephone and dispatching procedures and techniques; emergency situations and operating procedures; and emergency medical dispatch procedures.

## 15 Public, Protective, and Government Service

### 15148A001 Security and Protection Workplace Experience

CTE Course

*Available Starting SY 2021*

Security and Protection Workplace Experience courses provide work experience in fields related to security and protection. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### 15151A001 Fire Science

CTE Course

*Available Starting SY 2020*

Fire Science courses introduce students to the field of fire prevention and control and enable them to extend their knowledge through the use of chemical, physical, and engineering principles to understand factors involved in fires. Course topics typically include the chemistry of combustion, factors that influence fire (such as structural design and meteorology), and safety procedures.

### 15152A001 Fire-Fighting I

CTE Course

*Available Starting SY 2011*

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

### 15152A002 Fire-Fighting II

CTE Course

*Available Starting SY 2011*

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

## 15 Public, Protective, and Government Service

### 15198A001 Fire Management Workplace Experience

CTE Course

*Available Starting SY 2021*

Fire Management Workplace Experience courses provide work experience in fields related to fire management. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### 15201A001 Public Administration

CTE Course

*Available Starting SY 2020*

Public Administration courses provide an overview of the structure, roles, and duties of public governments and associated agencies. These courses explore the foundation and evolution of the public service sector, issues related to the provision of services by governmental bodies, and the missions and constraints of various departments within local and state, and the federal government. In addition, students may explore a particular public administration topic (such as the tax base and structure, the legislative process, selection of public servants, resource management, and so on) in greater detail.

### 15202A001 Community Protection

CTE Course

*Available Starting SY 2020*

Community Protection courses provide students with information regarding the personnel and agencies concerned with protection of the home, city, state, and nation. Topics covered typically include civil defense and disaster preparedness; crime prevention; pollution control; fire prevention and control; legal and social systems and principles; and public health. These topics may be explored from the viewpoint of a community resident and citizen using these services or of that of one interested in pursuing a public service career.

### 15202A002 Public Health

CTE Course

*Available Starting SY 2020*

Public Health courses provide students with knowledge and understanding of careers in the public health arena. Students will learn historical and contemporary public health stories to understand the systems, careers, tools, and skills associated with the public health enterprise. Additional topics may include disease prevention and containment; health literacy; health policy; and social, economic, environmental, and geographical impacts on public health.

## 15 Public, Protective, and Government Service

### 15203A001 Public Policy

CTE Course

*Available Starting SY 2021*

Public Policy courses provide students with the opportunity to design, propose, and analyze programs and policies implemented by government agencies. Activities typically include identifying social issues and problems, generating recommendations, using data to quantify the extent of a problem or evaluate its solution, communicating ideas and findings, and understanding decision-making processes.

### 15248A001 Government Service Workplace Experience

CTE Course

*Available Starting SY 2021*

Government Service?Workplace Experience courses provide work experience in fields related to government service. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### 15248A002 Government & Public Administration Workplace Experience

CTE Course

*Available Starting SY 2022*

Government & Public Administration Workplace Experience courses provide work experience in fields related to the Government & Public Administration cluster. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

## 15 Public, Protective, and Government Service

**15998A001 Law, Public Safety, Corrections & Security  
Workplace Experience**

**CTE Course**

*Available Starting SY 2022*

Law, Public Safety, Corrections & Security Workplace Experience courses provide work experience in fields related to the Law, Public Safety, Corrections & Security cluster. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

## 16 Hospitality and Tourism

### **16001A001 Exploration of Hospitality Careers CTE Course**

*Available Starting SY 2019*

Exploration of Hospitality Careers courses survey a wide array of topics while exposing students to the variety of career opportunities in hospitality fields (such as food service, lodging, tourism, and recreation). These courses serve to introduce students to the general field of hospitality, providing an opportunity to identify a focus for continued study.

### **16051A001 Exploration of Restaurant, Food and Beverage Services CTE Course**

*Available Starting SY 2020*

Exploration of Restaurant, Food, and Beverage Services courses provide students with an overview of the restaurant, food, and beverage service industry. Topics covered include industry terminology, the history of restaurant, food, and beverage services, introduction to marketing, and the various careers available in the industry.

### **16052A001 Culinary Occupations I CTE Course**

*Available Starting SY 2011*

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

### **16053A001 Food Service CTE Course**

*Available Starting SY 2020*

Food Service courses provide instruction regarding nutrition, principles of healthy eating, and the preparation of food. Among the topics covered are large-scale meal preparation, preserving nutrients throughout the food preparation process, use and care of commercial cooking equipment, food storage, advances in food technology, sanitation, management, and the careers available in the food service industry.

### **16054A001 Nutrition and Culinary Arts I CTE Course**

*Available Starting SY 2011*

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

## 16 Hospitality and Tourism

### **16054A002 Nutrition and Culinary Arts II**

**CTE Course**

*Available Starting SY 2011*

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

### **16054A003 Nutrition and Wellness Occupations**

**CTE Course**

*Available SY 2011 - 2020*

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

### **16055A001 Culinary Occupations II**

**CTE Course**

*Available Starting SY 2011*

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

### **16056A001 Culinary Art Specialty**

**CTE Course**

*Available Starting SY 2020*

Culinary Art Specialty courses provide instruction in a particular type of cooking or culinary style. Examples of such specialty fields include baking, creating and decorating wedding cakes, Middle Eastern cuisine, and so on. These courses emphasize skills specific to the type of culinary art being studied.

## 16 Hospitality and Tourism

**16098A001**      **Restaurant, Food and Beverage Services Workplace Experience**      **CTE Course**

*Available Starting SY 2021*

Restaurant, Food, and Beverage Services Workplace Experience courses provide work experience in fields related to restaurant, food, and beverage services. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

**16101A001**      **Exploration of Lodging Careers**      **CTE Course**

*Available Starting SY 2020*

Exploration of Lodging Careers courses provide an overview of the lodging industry. Topics covered include lodging terminology, the history of lodging, introduction to marketing, and the various careers available in the lodging industry.

**16102A001**      **Lodging Occupations**      **CTE Course**

*Available Starting SY 2020*

Lodging Occupations introduces students to the lodging industry and refine their related knowledge and skills. Topics covered typically include property management, guest psychology and relationships, lodging operations, food and beverage services, and other topics related to support services within the lodging industry.

**16103A001**      **Facilities Planning and Management Services**      **CTE Course**

*Available Starting SY 2020*

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

## 16 Hospitality and Tourism

### 16148A001 Lodging Workplace Experience

CTE Course

*Available Starting SY 2021*

Lodging Workplace Experience courses provide work experience in fields related to lodging. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### 16151A001 Introduction to Travel and Tourism

CTE Course

*Available Starting SY 2020*

Introduction to Travel and Tourism courses provide an overview of the travel and tourism industry. Topics covered in this course may include travel and tourism terminology, the history of travel, introduction to marketing, and the various careers available in travel and tourism.

### 16152A001 Travel and Tourism

CTE Course

*Available Starting SY 2020*

Travel and Tourism courses provide the knowledge and skills necessary to work in the travel industry such as sales techniques, marketing principles, and entrepreneurial skills. Additional skills learned in these courses typically include travel agency procedures, airline reservation systems, public relations, hotel/motel registration systems and services, and conference and convention planning.

### 16153A001 World Travel and Tourism

CTE Course

*Available Starting SY 2020*

World Travel and Tourism courses provide the knowledge and skills necessary to work in the travel industry, with a focus on travel outside of the United States. Topics covered may include geography of the continents; customs, cultures, and tourist destinations in other countries; special documentation needed for international travel; and planning events to client specifications.

### 16154A001 Eco-tourism

CTE Course

*Available Starting SY 2020*

Eco-tourism courses provide the knowledge and skills necessary to work in the travel industry, with particular attention paid to conservation and environmental issues surrounding travel and tourism. Topics covered may include recreational opportunities related to on- and off-site attractions and environmental and ecological principles.

## 16 Hospitality and Tourism

### **16198A001 Travel and Tourism Workplace Experience**

**CTE Course**

*Available Starting SY 2021*

Travel and Tourism Workplace Experience courses provide work experience in fields related to travel and tourism. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### **16201A001 Exploration of Recreation, Amusement and Attractions**

**CTE Course**

*Available Starting SY 2019*

Exploration of Recreation, Amusement, and Attractions courses provide an overview of the recreation industry. Topics covered in this course may include industry terminology; the history of recreation, amusement, and attractions; introduction to marketing; and the various careers available in the industry.

### **16202A001 Recreation, Amusement and Attractions**

**CTE Course**

*Available Starting SY 2020*

Recreation, Amusement, and Attractions courses provide students with the attitudes, skills, and knowledge needed for employment in theme parks, attractions and outdoor recreation facilities, exhibitions, and event planning. Topics covered may include planning trade shows, fairs, and conferences; outdoor recreation and management; financial transactions; salesmanship; guest services and satisfaction; culture and customs; computer and industry technology; eco-tourism; client information; and planning specialized events while incorporating themes, timelines, budgets, target audiences, agendas, and public relations.

### **16204A001 Recreation, Amusement, and Attractions Management**

**CTE Course**

*Available Starting SY 2021*

Recreation, Amusement, and Attractions Management courses teach students about the development and management of recreational areas and parks and cover the economic and environmental impact of tourism. These courses may also emphasize career skills relative to the outdoor parks, recreation, and tourism industries.

## 16 Hospitality and Tourism

### **16248A001 Recreation, Amusement and Attractions Workplace Experience**

**CTE Course**

*Available Starting SY 2021*

Recreation, Amusement, and Attractions Workplace Experience courses provide work experience in fields related to recreation, amusement, and attractions. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### **16998A001 Hospitality & Tourism Workplace Experience**

**CTE Course**

*Available Starting SY 2022*

Hospitality & Tourism Workplace Experience courses provide work experience in fields related to the Hospitality & Tourism cluster. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

## 17 Architecture and Construction

### 17001A001 Beginning Construction

CTE Course

*Available Starting SY 2012*

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

### 17002A001 Construction Trades I

CTE Course

*Available Starting SY 2011*

This course provides experiences related to the erection, installation, and maintenance of residential buildings and related fixtures. Planned learning activities allow students to understand fundamental principles and methods, and develop technical skills related to masonry, carpentry, and finish work. Instruction includes safety principles and practices, recognition of standard lumber sizes, foundation layout methods, building concepts and procedures, local, state, and national codes, cost estimating, and blueprint reading.

### 17002A002 Construction Trades II

CTE Course

*Available Starting SY 2011*

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

### 17003A001 Carpentry I

CTE Course

*Available Starting SY 2011*

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

## 17 Architecture and Construction

### 17003A002      **Carpentry II**

**CTE Course**

*Available Starting SY 2011*

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

### 17005A001      **Drywall Installation**

**CTE Course**

*Available Starting SY 2011*

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

### 17005A002      **Drywall Installation II**

**CTE Course**

*Available SY 2011 - 2020*

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

### 17007A001      **Cabinetmaking & Millwork I**

**CTE Course**

*Available Starting SY 2011*

This course introduces students to the basic design and fabrication of residential cabinetry and custom furniture. The course also exposes students to the millwork and millwright industry. Instruction includes safety practices in using hand tools and power equipment.

## 17 Architecture and Construction

### **17007A002 Cabinetmaking & Millwork II**

**CTE Course**

*Available Starting SY 2011*

This course provides learning experiences related to the erection, installation, and maintenance of commercial and residential cabinetry, and the repair and maintenance of stationary woodworking machinery. Planned learning activities emphasize the development of more advanced knowledge and skills than those provided in Cabinetmaking and Millwork I. This course provides the student with the knowledge and skills necessary to perform basic cabinetry construction and how it relates to the manufacturing process. In addition, more advanced woodworking machine maintenance skills are introduced.

### **17007A003 Beginning Cabinetmaking**

**CTE Course**

*Available Starting SY 2012*

Beginning Cabinetmaking course provides students with experience in constructing cases, cabinets, counters, and other interior woodwork. Students learn how to use various woodworking machines and power tools for cutting and shaping wood. This course can cover the different methods of joining pieces of wood, how to use mechanical fasteners, and how to attach hardware.

### **17008A001 Masonry**

**CTE Course**

*Available Starting SY 2011*

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

### **17008A002 Masonry II**

**CTE Course**

*Available SY 2011 - 2020*

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

## 17 Architecture and Construction

### **17009A001 Building Maintenance I**

**CTE Course**

*Available Starting SY 2011*

This course includes learning experiences and skills in servicing building systems, repair and maintenance of machinery, maintaining plumbing systems, minor electrical repairs, essential heating ventilation and air conditioning system maintenance, painting, and basic carpentry. These experiences provide students the opportunity to become knowledgeable in a variety of practices and skills associated with all trades necessary to maintain a building's daily operations that are repair-related. The Building Maintenance I course provides instruction and hands-on activities including the use of test equipment and tools, hand tools, basic electricity, carpentry and masonry skills.

### **17009A002 Building Maintenance II**

**CTE Course**

*Available Starting SY 2011*

This course provides learning experiences and skills related to servicing building systems, repairing and maintenance of machinery, maintaining plumbing systems, minor electrical repairs, essential heating ventilation and air conditioning system maintenance, painting and basic carpentry. These experiences provide students the opportunity to become knowledgeable in a variety of practices and skills associated with all trades necessary to maintain a building's daily operations that are repair-related. Planned learning activities should emphasize the development of more advanced knowledge and skills than those provided in Building Maintenance I. Students are instructed in areas of safety including hand tool, power tool, ladder, scaffolding, and the use of safety harnesses. Additional instruction is provided in drywall installation and repair, maintenance painting, tile setting and repair, and basic masonry repair. Students demonstrate knowledge of technology-related mathematics, reading, writing, vocabulary, blueprint reading, and science as these are integrated throughout the curriculum.

### **17011A001 Wall Finishing**

**CTE Course**

*Available Starting SY 2011*

This course provides students with experiences related to the painting and wall covering industry. Introductory experiences consist of finishing both exterior and interior surfaces, mixing, blending, and the proper techniques in applying paints, lacquers, enamels, and varnishes. Students learn to use hand tools in removing old surfaces and preparing new surfaces. Safety and care in handling materials are emphasized in this course. Skills introduced include safety, preparation of surfaces for painting, wall-coverings, concrete finishing, plaster finishing, finishing surfaces, filling holes and cracks, applying primer, and sealing wood surfaces.

## 17 Architecture and Construction

### **17011A002 Wall Finishing II**

**CTE Course**

*Available SY 2011 - 2020*

This course includes planned learning activities that emphasize the development of more advanced knowledge and skills than those provided in Wall Finishings I. Students are instructed in areas of safety that includes hand tool, power tool, ladder, scaffolding and the use of safety harnesses. Students are introduced to skills in areas such as estimating labor materials, selecting and using spraying equipment, finishing surfaces with wall-coverings, maintaining and repairing of structures, inventory of supplies and equipment, determining basic maintenance procedures for tools and equipment, mixing primer, staining wood, and varnishing wood.

### **17013A001 Commercial Construction**

**CTE Course**

*Available Starting SY 2021*

Commercial Construction courses focus on residential construction principles and their relationship to commercial applications. Topics typically covered include commercial concrete forming, reinforcement and placement methods, stair construction, metal framing, interior finishes, suspended ceiling systems, metal framing and drywall applications, and commercial roofing methods and systems. These courses may also address equipment and tool usage in commercial construction.

### **17014A001 Concrete Foundations, Pavement, and Asphalt**

**CTE Course**

*Available Starting SY 2021*

Concrete Foundations, Pavement, and Asphalt provides an overview of concrete and asphalt construction including material composition, behavior, and testing. Additional topics may include climate factors, drainage, pavement evaluation, maintenance strategies, rehabilitation and preservation techniques, and cost analysis.

### **17017A001 Civil Construction**

**CTE Course**

*Available Starting SY 2021*

Civil Construction courses provide an introduction to the skills and knowledge of building and maintaining a high quality civil infrastructure including transportation systems, structures, and underground sewers and pipelines. Topics may include civil construction materials (e.g., cements and aggregates, steels and timber, pavement materials, asphalt, pipe, and geo-synthetics); life cycle assessments of structures and systems; reading civil blueprints, and understanding civil construction techniques.

### **17017A002 Geometry in Construction**

**CTE Course**

*Available Starting SY 2023*

Geometry in Construction courses provide students with an integrated way to learn Geometry through the application in Construction. The construction concepts within the course are organized to compliment the skills and the knowledge that align to High School - Geometry standards. Students will apply these skills and knowledge to the completion of construction projects.

## 17 Architecture and Construction

### 17048A001 General Construction Workplace Experience

CTE Course

*Available Starting SY 2021*

General Construction Workplace Experience courses provide work experience in a field related to construction. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### 17056A001 HVAC I

CTE Course

*Available Starting SY 2011*

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

### 17056A002 HVAC II

CTE Course

*Available Starting SY 2011*

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

### 17058A001 Plumbing

CTE Course

*Available Starting SY 2011*

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

## 17 Architecture and Construction

### 17058A002 Plumbing II

CTE Course

*Available SY 2011 - 2020*

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

### 17098A001 HVAC Workplace Experience

CTE Course

*Available Starting SY 2021*

HVAC Workplace Experience courses provide work experience in a field related to air conditioning, heating, and/or plumbing. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### 17102A001 Electrical Systems I

CTE Course

*Available Starting SY 2011*

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

### 17102A002 Electrical Systems II

CTE Course

*Available Starting SY 2011*

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

## 17 Architecture and Construction

### 17102A003 Electrical Trades I

CTE Course

*Available Starting SY 2011*

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

### 17102A004 Electrical Trades II

CTE Course

*Available Starting SY 2011*

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

### 17102A005 Beginning Electricity

CTE Course

*Available Starting SY 2012*

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

### 17102A006 Photovoltaic System Application I

CTE Course

*Available Starting SY 2023*

The Photovoltaic System Applications I course covers the skills and knowledge necessary to work as a technician in the photovoltaic electricity industry. Subjects addressed include safety training, the function and interrelation of the systems located in a photovoltaic system, as well as a systems view of the equipment needed to provide usable electricity from sunlight. The course will focus primarily on the selection and application of photovoltaic equipment needed to provide both grid-tied and off-grid power.

### 17102A007 Photovoltaic System Application II

CTE Course

*Available Starting SY 2025*

The course will cover the advanced principles of photovoltaics and how to effectively incorporate PV systems into stand-alone or interconnected electrical systems. The course will cover site evaluations, operation, design and sizing, installation, and advantages and disadvantages of different systems. Students will develop better understanding of how to apply the skills learned in Photovoltaic System Applications I or Solar Energy Systems.

## 17 Architecture and Construction

### **17104A001 Industrial Electronics I**

**CTE Course**

*Available Starting SY 2011*

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

### **17104A002 Industrial Electronics II**

**CTE Course**

*Available Starting SY 2011*

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

### **17105A001 Introduction to Solar Energy**

**CTE Course**

*Available Starting SY 2025*

Students will examine, operate, and evaluate a small solar-powered electrical generation system while exploring the solar energy industry and career opportunities. The course will include identification and analysis of the components of basic photovoltaic systems and solar thermal technologies and how they applies to the solar energy industrial systems. Students will use standard hand tools and materials, learn the basics of electrical wiring and equipment, and learn best practices in safety. Students will learn how to test operating voltages and calibrates to systems. Small solar labs should be used to provide students with hands-on experience installing and troubleshooting solar energy installations.

### **17105A002 Solar Energy Systems**

**CTE Course**

*Available Starting SY 2025*

Solar Energy System courses cover the operating principles, function, location, and application of photovoltaic and thermal electric systems. The content includes solar energy basics, site surveys, available technologies, installation options, cost estimation, and project justification. The course should touch upon residential, commercial, and industrial applications and will include both lecture as well as hand-on lab sessions.

## 17 Architecture and Construction

### 17109A001 Introduction to Renewable Energies

CTE Course

*Available Starting SY 2023*

Introduction to Renewable Energies courses will provide students with basic competencies and skills associated with various energy sources, and electrical power generation, transmission, and distribution. Students will be introduced to competencies and understanding in the history of energy, basics of electrical wiring and equipment, best practices in safety, the global impact of renewable and nonrenewable resources, career opportunities, energy technology, energy resources, alternative energy sources and their respective advantages and disadvantages, the impact of conventional and alternative energy sources on the environment, and emerging future energy technologies.

### 17109A002 Renewable Energies

CTE Course

*Available Starting SY 2023*

Renewable Energies courses provides students with competencies and skills associated with various energy sources, and electrical power generation, transmission, and distribution. Students will strengthen competencies and understanding in the history of energy; the global impact of renewable and nonrenewable resources; career opportunities; energy technology, energy resources; and emerging future energy technologies. Topics could include further skill development in the manufacturing, installation, and/or repair of renewable energy systems including solar energy, wind energy, geothermal energy, hyrdo energy, and/or biomass energy.

### 17148A001 Electricity/Electronics Workplace Experience

CTE Course

*Available Starting SY 2021*

Electricity/Electronics Workplace Experience courses provide students with work experience in a field related to electricity and/or electronics. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

## 17 Architecture and Construction

### **17998A001 Building Maintenance Workplace Experience CTE Course**

*Available Starting SY 2021*

Building Maintenance Workplace Experience courses provide students with work experience in a field related to architecture or construction. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### **17998A002 Heavy Equipment Technician Workplace Experience CTE Course**

*Available SY 2020 - 2020*

Heavy Equipment Technician Workplace Experience courses provide students with work experience in a field related to architecture or construction. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### **17998A003 Architecture & Construction Workplace Experience CTE Course**

*Available Starting SY 2022*

Architecture & Construction Workplace Experience courses provide work experience in fields related to the Architecture & Construction cluster. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

## 18 Agriculture, Food, and Natural Resources

### **18001A001 Introduction to the Agricultural Industry**

**CTE Course**

*Available Starting SY 2011*

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

### **18001A002 Exploring Food & Agriculture**

**CTE Course**

*Available Starting SY 2023*

Exploring Food & Agriculture courses provide the opportunity to learn fundamental concepts in agriculture to serve as a foundation for future courses and to inform students about the industry that is so vital to society and to their future. Major units of instruction include an introduction to the agricultural industry, animal science, plant science, horticulture science, agribusiness, environmental science, agricultural mechanics, food science, and leadership and personal development. Participation in FFA student organization activities is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### **18001A003 Principles of AFNR**

**CTE Course**

*Available Starting SY 2023*

Principles of AFNR courses provide instruction in the foundations of various segments of the agricultural industry. Agricultural career opportunities shall be emphasized. Animal agriculture, plant and land management, and agricultural mechanics skills will be the focus. The selection and planning of a supervised agricultural experience program and related record keeping will be presented. Participation in local FFA student organization activities is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### **18001A004 STEM In AFNR**

**CTE Course**

*Available Starting SY 2023*

STEM in AFNR courses provide an introduction to Science, Technology, Engineering and Mathematics (STEM) with primary areas of focus in Agriculture, Food & Natural Resources. It will provide a comprehensive background to allow students to explore and identify interests which may assist students in pathway and course selection at the secondary level. Participation in FFA student organization activities is an integral course component for leadership development, career exploration and reinforcement of academic concepts. This course may require use of materials and tools more appropriate for students in grades 7-8 regarding safety consideration, material handling, and appropriate laboratory behavior.

## 18 Agriculture, Food, and Natural Resources

### 18003A001 Basic Agricultural Science

CTE Course

*Available Starting SY 2011*

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

### 18004A001 Agricultural Biology

CTE Course

*Available Starting SY 2023*

Agricultural Biology is designed for freshman and sophomore students interested in learning about food systems or the production, processing, distribution, and consumption of food products as well as the interactions of various aspects of food systems with the natural environment. Agricultural Biology will cover all major topics in life science including biochemistry, ecology, cells, reproduction, heredity, biological evolution and diversity. The course will cover the majority of the Performance Expectations in the following Illinois Learning Standards in Science as well as a few physical, earth and space science, and engineering design performance expectations: HS-LS1 - From Molecules to Organisms: Structures and Processes HS-LS2 - Ecosystems: Interactions, Energy, and Dynamics HS-LS3 - Heredity: Inheritance and Variation of Traits HS-LS4 - Biological Evolution: Unity and Diversity Specific emphasis will be placed on developing skills related to the Scientific and Engineering Practices and building Cross Cutting Concepts as students develop explanations for phenomena and solve real-world problems. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration, and reinforcement of academic concepts.

### 18051A001 Horticultural Production & Management

CTE Course

*Available Starting SY 2011*

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

## 18 Agriculture, Food, and Natural Resources

### **18051A002      Biological Science Applications in Agriculture - Plants**

**CTE Course**

*Available Starting SY 2011*

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

### **18051A003      Crop Science**

**CTE Course**

*Available Starting SY 2012*

Crop Science courses are designed to provide students with the knowledge and skills necessary for future employment in the agronomy or related industries. Major units of instruction include scientific method, cellular biology, genetics, biotechnology, soil classifications, soil erosion and management, soil fertility, plant classification, plant anatomy and physiology, plant propagation, plant growth, integrated pest management, grain, oil, forage, sugar, and fiber crop production methods, grain quality, grain storage, and grain transportation. Applied science and math skills and concepts will be stressed throughout the course as they relate to each area. Improving computer and workplace skills will be a focus. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### **18052A001      Basic Horticultural Science**

**CTE Course**

*Available Starting SY 2011*

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

## 18 Agriculture, Food, and Natural Resources

### 18053A001 Greenhouse Production

CTE Course

*Available Starting SY 2011*

This course provides advanced agriculture students a technical understanding and working knowledge of the greenhouse industry. Topics include safety, plant physiology, plant identification, growing media, plant nutrition, integrated pest management, propagation, growing greenhouse crops and greenhouse business concepts. Students will gain knowledge and skills related to the care and management of gardens and greenhouses. Agribusiness units will be introduced in merchandising, advertising, sales, and operating a greenhouse business. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### 18054A001 Landscaping & Turf Management

CTE Course

*Available SY 2011 - 2022*

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

### 18054A002 Landscape Design & Management

CTE Course

*Available Starting SY 2022*

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

## 18 Agriculture, Food, and Natural Resources

### 18054A003 Turfgrass and Sports Field Management

CTE Course

*Available Starting SY 2022*

This course is designed for students interested in gaining knowledge and skills associated with the duties and tasks of industry and professionals who establish and maintain turf in public areas such as golf courses; parks; athletic fields; school, industrial, and institutional campuses; and residential lawns. “Hands on” applications associated with turf grass management and sports field management will be applied to include; establishing turf, fertilizing, irrigating, and pest management control of grassed areas; operating and maintaining machinery and equipment. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### 18054A004 Landscape Construction & Maintenance

CTE Course

*Available Starting SY 2023*

Landscape Construction and Maintenance courses focus on the principles and practices for sustainable construction, maintenance, and installation of various landscape features for residential and commercial sites. Course includes best practices and strategies for snow and ice management. Students will gain practical experience in the use of surveying instruments, and concrete and paving materials. Additional experience in constructing drainage systems, walls, steps, fences, terraces, and patios will be discussed. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts

### 18055A001 Soil Science

CTE Course

*Available Starting SY 2020*

Soil Science courses involve the study of soil properties, including soil chemistry, biology, fertility, mineralogy, and hydrology. Topics covered may also include soil conservation, irrigation, soil genesis, soil surveys, and management. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

## 18 Agriculture, Food, and Natural Resources

### **18056A001 Floral Design & Marketing**

**CTE Course**

*Available Starting SY 2021*

Floral Design and Marketing covers principles of floral art with an emphasis on commercial design. Topics include basic design styles and color harmonies; identification, use, and care of processing of cut flowers and foliage; mechanical aids and containers; personal flowers; holiday designs; and plant identification and care. The student will demonstrate the ability to identify floral design styles and color harmonies; identify cut flowers and foliage and the care and processing methods for extended vase life; select containers and mechanical aids; and create basic floral arrangements. The study of the general principles of plants, and their life processes and morphology, with emphasis on major floral crops are also covered. Students will also learn about marketing strategies and floral shop setup. Students will develop a bill of materials and look at other key factors in running a floral shop like overhead cost. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### **18056A002 Specialty Crop Production**

**CTE Course**

*Available Starting SY 2021*

Specialty Crop Production courses include a study of sustainable crop production practices, including but not limited to vegetables, culinary and medicinal herbs, fruit production, ornamental crops and cut flowers. Topics include harvest methods, seasonal crop selection, planting procedures, cultural practices, soil testing, soil amendment, integrated pest management, marketing and economic viability, and various record keeping procedures, such as those needed for organic certification. Manual, mechanical, and chemical weed and pest management techniques will be discussed. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### **18056A003 Fruit and Vegetable Production**

**CTE Course**

*Available Starting SY 2023*

Fruit & Vegetable Production courses examine the factors influencing the successful growing, harvesting, storing, and marketing of fruit and vegetable crops. A special focus should be placed on low-input farming systems, irrigation efficiency, pest management, and alternative crops and technology. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration, and reinforcement of academic concepts.

### **18097A001 Plant Systems Independent Study**

**CTE Course**

*Available Starting SY 2021*

Courses in Plant Systems Independent Study, often conducted with instructors as mentors, enable students to explore topics of interest related to plant systems. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular application, to explore a topic in greater detail, or to develop more advanced skills. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

## 18 Agriculture, Food, and Natural Resources

### 18098A001 Plant Systems Workplace Experience

CTE Course

*Available Starting SY 2021*

Plant Systems Workplace Experience courses provide work experience in fields related to plant systems (care, propagation, and processing). Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships. Participation in FFA student organization activities is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### 18101A001 Basic Biological Science Applications in Agriculture - Animals

CTE Course

*Available Starting SY 2011*

This course is designed to reinforce and extend students' understanding of science by associating scientific principles and concepts with relevant applications in agriculture. Students will examine major phases of animal agriculture and specific biological science concepts that govern management decisions in the animal industry. Topics of study are in the areas of growth and development of animals – cell structure and function, genetics, taxonomy, embryology, ethology, nutrition, immunity systems, and processing animal products – preservation, fermentation, and pasteurization. The course will be valuable preparation for further education and will increase the relevance of science through the applied setting of agriculture by enhancing literacy in science and the scientific process. Improving computer and workplace skills will be a focus. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### 18101A002 Animal Science

CTE Course

*Available Starting SY 2012*

This course will develop students' understanding of the livestock (beef, dairy, sheep, goats, and swine), poultry, and large (equine) animal industry. Topics of instruction include scientific investigations, genetics, animal anatomy and physiology, animal nutrition, animal reproduction, animal health, and meat science. Improving computer and workplace skills will be a focus. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

## 18 Agriculture, Food, and Natural Resources

### 18101A003 Basic Animal Science

CTE Course

*Available Starting SY 2020*

This course is designed to introduce students to the livestock (beef, dairy, sheep, goats, and swine), poultry, and large (equine) animal industry and provide them with basic animal science knowledge that can be further developed in advanced animal science courses. Major units of instruction include animal science careers, animal anatomy and physiology, animal reproduction, animal nutrition, genetics, animal health, small and large animal care, and meat science. Improving computer and workplace skills will be a focus. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### 18102A001 Small Animal Care

CTE Course

*Available Starting SY 2020*

Small Animal Care courses focus on the care and management of small animals. Animal nutrition, health, behavior, reproduction and breeding, anatomy and physiology, use of qualitative and quantitative analyses for decision making, facilities, handling and training, and grooming are typical areas of study. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### 18103A001 Large Animal Care

CTE Course

*Available Starting SY 2020*

Large Animal Care courses focus on the care and management of large animals. Animal nutrition, health, behavior, reproduction and breeding, anatomy and physiology, use of qualitative and quantitative analyses for decision making, facilities, handling and training, and grooming are typical areas of study. Course topics may include product processing and marketing. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### 18104A001 Equine Science

CTE Course

*Available Starting SY 2020*

Equine Science courses focus on the care and management of horses. Animal nutrition, health, behavior, reproduction and breeding, anatomy and physiology, use of qualitative and quantitative analyses for decision making, facilities, handling and training, and grooming are typical areas of study. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

## 18 Agriculture, Food, and Natural Resources

### 18105A001 Veterinary Science

CTE Course

*Available Starting SY 2011*

This course will develop students' understanding of the small and companion animal industry, animal anatomy and physiology, animal ethics and welfare issues, animal health, veterinary medicine, veterinary office practices, and animal services to humans. Topics to be discussed include veterinary terminology, anatomy and physiology, pathology, genetics, handling and restraint, first-aid, and physical examinations along with common surgical skills. Career exploration will focus on veterinarian, veterinary lab technicians, office lab assistant, small animal production, research lab assistant, and animal nutrition lab technician. Improving computer and workplace skills will be a focus. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### 18105A002 Veterinary Science

CTE Course

*Available SY 2019 - 2019*

Veterinary Science courses impart information about the causes, diagnosis, and treatment of diseases and injuries of animals, typically emphasizing domestic and farm animals. Course topics focus on anatomy and physiology, nutrition, behavior, and reproduction, but may also include other areas of study as appropriate.

### 18105A003 Advanced Veterinary Science

CTE Course

*Available Starting SY 2023*

Advanced Veterinary Science prepares students for careers in the field of animal science and veterinary medicine. Students will attain academic skills related to animal systems, animal industry workplace practices, and develop knowledge of the animal industry. Students will be placed in a variety of settings to assist in various medical applications and procedures. Students will be exposed to a wide range of scientific principles, such as genetics, anatomy, physiology/nutrition, disease, pests, and management practices. The scientific processes of observation, measurement, hypothesizing, data gathering, interpretation, analysis, and application are a focus. Career opportunities and related post-secondary programs are explored and examined. Learning activities are varied, with classroom, laboratory, hands-on activities, and field experiences emphasized. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects are an integral course component for leadership development, career exploration, and reinforcement of academic concepts.

## 18 Agriculture, Food, and Natural Resources

### 18106A001 Service and Support Animal Training

CTE Course

*Available Starting SY 2020*

Service and Support Animal Training course provide students with skills and knowledge necessary to provide care and training for companion and service animals. Topics include animal behavior, training tools, and animal care. The course will focus on providing students understanding on how to select, socialize, and train companion and service animals to do work or perform tasks for the benefit of an individual with a disability, including a physical, sensory, psychiatric, intellectual, or other mental disability. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### 18107A001 Animal Nutrition

CTE Course

*Available Starting SY 2021*

Animal Nutrition courses provide students with opportunities to study the structure and function of organic and inorganic nutrients. Topics may include the essential nutritive requirements of domestic livestock, poultry, and companion animals; digestion, absorption, metabolism, and barriers for nutrient utilization; sources of nutrients; application of energy systems and concepts; and regulation of feed intake in animals. These courses also teach students how to compare and contrast the nutritional levels for animal maintenance and production. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### 18108A001 Animal Genetics

CTE Course

*Available Starting SY 2021*

Animal Genetics courses explore genetic inheritance in agricultural animals and the identification of livestock breeds by the origin, significance, distribution, and domestication of animal species. These courses allow students to compare and contrast the hierarchical classification of the major agricultural animal species and identify breeding system options based on the principles of genetics. These courses also address selecting animals based on quantitative breeding values for specific characteristics. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

## 18 Agriculture, Food, and Natural Resources

### 18109A001 Integrated Pest Management

CTE Course

*Available Starting SY 2021*

Integrated Pest Management courses help students develop an understanding of the life cycles of and damage caused by pests, diseases, and weeds. Course topics may include the application of pesticides and/or herbicides to manage pest populations, assessing the effectiveness of pest management plans, types of pesticides and their formulations, pesticide labels, human pesticide poisoning, pesticides in the environment, safe handling of pesticides, pesticide application equipment and calibration, and Illinois pesticide laws and regulations. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### 18147A001 Animal Systems Independent Study

CTE Course

*Available Starting SY 2021*

Courses in Animal Systems Independent Study, often conducted with instructors as mentors, enable students to explore topics of interest related to animal systems. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular application, to explore a topic in greater detail, or to develop more advanced skills. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### 18148A001 Animal Systems Workplace Experience

CTE Course

*Available Starting SY 2021*

Animal Systems Workplace Experience courses provide work experience in fields related to animal systems (management, care, and/or processing). Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships. Participation in FFA student organization activities is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

## 18 Agriculture, Food, and Natural Resources

### 18201A001      **Agricultural Business Management**

**CTE Course**

*Available Starting SY 2011*

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

### 18201A002      **Basic Agricultural Business**

**CTE Course**

*Available Starting SY 2022*

This course on topics and concepts related to the field of agricultural business. The course introduces business concepts such as record keeping, banking and finance, the role of government/ the USDA in agricultural business, consumerism trends, basics of credit, investment, and management. They usually provide a brief overview of the American Agricultural economic system, cooperatives and corporate organizations. This course may also expose students to a wide variety of agricultural business fields such as sales, marketing, accounting, loan officer and other related careers. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### 18202A001      **Agricultural Sales and Marketing**

**CTE Course**

*Available Starting SY 2011*

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

## 18 Agriculture, Food, and Natural Resources

### 18202A002      **Agricultural Entrepreneurship**

**CTE Course**

*Available Starting SY 2022*

Agricultural entrepreneurship courses acquaint students with the knowledge and skills necessary to own and operate their own businesses in the agriculture, food and natural resources industry. Topics from several fields typically form the course content: economics, marketing principles, human relations and psychology, business and labor law, legal rights and responsibilities of ownership, business and financial planning, finance and accounting, and communication. Several topics surveyed in agribusiness systems courses may also be included. Participation in FFA student organization activities is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### 18203A002      **Agricultural Communications**

**CTE Course**

*Available Starting SY 2011*

Agricultural Communication courses introduce the broad field of agricultural communications and provides for the development of knowledge and skill in specific areas related to communications theory and practice. Content includes the meaning and process of communication, the role and history of print and electronic media, legal aspects of agricultural communications, news and feature writing in agriculture, news photography, layout and design, and ethics in agricultural communications. Content will also include web design and broadcast journalism in agriculture. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### 18203A003      **Agricultural Leadership**

**CTE Course**

*Available Starting SY 2021*

Agricultural Leadership courses help students develop leadership skills with a focus on opportunities in the food, fiber, and natural resources industries. Topics may include but are not limited to human relationships and effective communication, decision-making and problem-solving, leadership qualities and styles, and ensuring successful completion of group activities. Students will learn to lead groups and teams, manage volunteers, exercise leadership ethics, and be able to demonstrate leadership in multicultural settings. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### 18204A001      **Agricultural Economics**

**CTE Course**

*Available Starting SY 2022*

This course is designed to provide students with the knowledge of basic economic principles of micro and macroeconomics, international economics, comparative economic systems, measurement, and methods. Through the course, the students will understand and apply basic economic principles as they relate to individual consumers, production agriculture, and agri-business management. The students will develop an Agricultural project and keep accurate agriculture records of expenses, receipts, and profit/losses. This course will satisfy the Economics requirement for graduation. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

## 18 Agriculture, Food, and Natural Resources

### 18204A002 Global Agriculture

CTE Course

*Available Starting SY 2022*

This course will primarily focus on agriculture in developing countries and frame this focus within a discussion of contemporary crucial issues facing food, agriculture and natural resources on a global scale. The course will look at the impacts of geographic, political, economic, and social issues of a particular country or region and how that affects their agriculture and trade. This course will also examine the impacts that trade agreements have on other countries' agriculture. Specific emphasis will also be placed on debates concerning global hunger and food security. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### 18204A003 Agricultural Finance & Accounting

CTE Course

*Available Starting SY 2023*

Agricultural Finance & Accounting introduces students to accounting concepts, financial statements, data collection, probability, and graphing data as they apply to the management, financing, and financial record-keeping of agricultural enterprises. Students will use technology and related software to demonstrate course concepts and industry-aligned skills. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects are an integral course component for leadership development, career exploration, and reinforcement of academic concepts.

### 18204A004 Agricultural Supply Chain Management

CTE Course

*Available Starting SY 2023*

Agricultural Supply Chain Management courses focus on the handling of the entire production flow of an agricultural good or service — starting from the raw components all the way to delivering the final product to the consumer. This course also focuses on management of daily operations within an enterprise, highlighting the importance of the ongoing nature of organizational functionality through areas such as capacity planning, inventory management, quality control, and supply chain management. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects are an integral course component for leadership development, career exploration, and reinforcement of academic concepts.

### 18204A005 Agritourism Management

CTE Course

*Available Starting SY 2023*

Agritourism Management courses focus on emerging business opportunities and structures in Agritourism. The course will identify and assess agritourism sector data describing industry supply and demand attributes and examine key distinguishing aspects of agritourism enterprise. Students will also learn about regulatory frameworks and policy, community and economic development dimensions, and relevant case studies specific to new agritourism oriented opportunities. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

## 18 Agriculture, Food, and Natural Resources

### 18205A001 Agriculture Computers and Technology

CTE Course

*Available Starting SY 2021*

Agriculture Computers and Technology courses help students develop their knowledge and skills in using computer and other technology to operate and manage agricultural businesses. These courses allow students to use computer hardware, software, and the Internet to find information, record and analyze financial and production data, track market trends and economic forecasts, monitor weather, utilize global positioning systems, and prepare communications and reports. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### 18247A001 Agribusiness Independent Study

CTE Course

*Available Starting SY 2021*

Courses in Agribusiness Independent Study, often conducted with instructors as mentors, enable students to explore topics of interest related to agribusiness. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular application, to explore a topic in greater detail, or to develop more advanced skills. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### 18248A001 Agribusiness Workplace Experience

CTE Course

*Available Starting SY 2021*

Agribusiness Workplace Experience courses provide work experience in fields related to agribusiness. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships. Participation in FFA student organization activities is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### 18302A001 Basic Food Processing

CTE Course

*Available Starting SY 2021*

Basic Food Processing courses impart the knowledge and skills needed to bring animal and plant products to market. They may cover a wide variety of topics, including care and maintenance of animals or plants, quality selection and preservation, equipment care and sanitation, government regulations, and marketing and consumer trends. This course may present an overview of agricultural processing or may specialize in particular types of products. Participation in FFA student organization activities is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

## 18 Agriculture, Food, and Natural Resources

### 18303A001 Plant Processing

CTE Course

*Available Starting SY 2021*

Plant Processing courses impart the knowledge and skills needed to bring plant products to market. They may cover a wide variety of topics, including plant production, quality selection and preservation, equipment care and sanitation, government regulations, and marketing and consumer trends. Plant Processing courses may present an overview of product processing or may specialize in specific plant products. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### 18304A001 Animal Processing

CTE Course

*Available Starting SY 2021*

Animal Processing courses impart the knowledge and skills needed to bring animal products to market. Although these courses may present an overview of animal care and maintenance, they typically emphasize quality selection, product preservation, equipment care and sanitation, government regulations, and marketing and consumer trends. Animal Processing courses may present an overview of several types of animal products or may specialize in particular products, such as meat, leather, wool, dairy products, and so on. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### 18305A001 Food Science

CTE Course

*Available Starting SY 2011*

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

## 18 Agriculture, Food, and Natural Resources

### 18305A002 Food Manufacturing & Management

CTE Course

*Available Starting SY 2023*

Food Manufacturing & Management introduces students to the principles and practices of food safety, processing, and packaging to develop solutions for problems in food production, handling, and storage. Learners will examine the full range of food processing techniques. Learners will examine the process of food product development and techniques used to measure food sensory aspects, shelf life, and food stability. Learners will examine government regulation's impact on labeling, new packaging technologies, harvesting, transportation, and the environment. Food laws, regulations, and regulatory and commercial grading standards will be examined. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects are an integral course component for leadership development, career exploration, and reinforcement of academic concepts.

### 18306A001 Aquacultural Science

CTE Course

*Available Starting SY 2011*

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

### 18307A001 Agricultural Government

CTE Course

*Available Starting SY 2022*

The Agricultural Government course will study the US agriculture industry and the large role it has and will continue to play in our country's past, present and future. Students will receive an overview of the U.S. Government and its structure and functions. Students will explore the politics around policies that relate to agriculture at home and abroad. They will examine how political parties and interest groups impact decisions made about agriculture and its markets. This course will focus on people's impacts on the democratic process. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

## 18 Agriculture, Food, and Natural Resources

### **18307A002      Current Issues in Agriculture, Food & Natural Resources**

**CTE Course**

*Available Starting SY 2023*

Current Issues in AFNR courses are designed to help students receive a broad understanding of current issues in agriculture, food, and natural resources that affects the social, political, economic, and cultural realms of society. Potential topics include the accessibility of food, impacts of trade, emerging technology, climate change, agricultural production and environmental practices. Skills developed in this course include problem analysis, course of action development, and decision-making systems in public and private sector organizations. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects are integral course components for leadership development, career exploration, and reinforcement of academic concepts.

### **18308A001      Agricultural Biotechnology**

**CTE Course**

*Available Starting SY 2011*

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

### **18308A002      Agricultural and Biological Engineering (ABE)**

**CTE Course**

*Available Starting SY 2022*

Agricultural and Biological Engineering (ABE) courses enable students to develop and expand their knowledge and skills in biology, physics, technology, and mathematics. Course content may vary widely, drawing upon diverse fields such as biomedical engineering, biomolecular genetics, bioprocess engineering, agricultural biology, or environmental engineering. Students may engage in problems related to biomechanics, cardiovascular engineering, genetic engineering, agricultural biotechnology, tissue engineering, biomedical devices, human interfaces, bioprocesses, forensics, and bioethics. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

## 18 Agriculture, Food, and Natural Resources

### 18308A003 Basic Biotechnology

CTE Course

*Available Starting SY 2022*

This course is designed to give students a comprehensive introduction to the scientific concepts and laboratory research techniques currently used in the field of biotechnology. Students attain knowledge about the field of biotechnology and deeper understanding of the biological concepts used. In addition, students develop the laboratory, critical thinking, and communication skills currently used in the biotechnology industry. Furthermore, students will explore and evaluate career opportunities in the field of biotechnology through extensive readings, laboratory experiments, class discussions, research projects, guest speakers, and workplace visits. The objectives covered in this course are both academic and technical in nature and are presented in a progressively rigorous manner. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### 18309A001 Urban Agriculture

CTE Course

*Available Starting SY 2020*

Urban Agriculture courses explore the principles and practices of urban agricultural production. Topics typically include urban crop production, harvesting, and management strategies. Other topics may include ethical, social, and environmental impacts of food and urban farming, and urban agriculture as a social movement. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### 18309A002 Community Food Production

CTE Course

*Available Starting SY 2022*

This course explores the principles and practices of urban agricultural production. Topics typically include urban crop production, harvesting, and management strategies. Other topics may include ethical, social, and environmental impacts of food and urban farming, and urban agriculture as a social movement. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### 18310A001 Sustainable Agriculture

CTE Course

*Available Starting SY 2021*

Sustainable Agriculture courses explore technological and environmental changes and concerns. These courses address alternative approaches to food production including, but not limited to, organics, low-input, natural, and sustainable production methodology and practices. Course content may include comparing the effects of alternative production practices to those of conventional production practices. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

## 18 Agriculture, Food, and Natural Resources

### 18311A001 Viticulture

CTE Course

*Available Starting SY 2021*

Viticulture courses prepare students for further studies in grape-growing, viticulture, and wine-making industry. Course topics typically include establishing and managing vineyards; harvesting; fermentation and wine making; marketing; and exploring career options within the industry. Agricultural applications specific to vineyards and wineries are emphasized.

### 18347A001 Food Products and Processing Systems Independent Study

CTE Course

*Available Starting SY 2021*

Courses in Food Products and Processing Systems Independent Study, often conducted with instructors as mentors, enable students to explore topics of interest related to agricultural production and processing. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular application, to explore a topic in greater detail, or to develop more advanced skills. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### 18348A001 Food Products and Processing Systems Workplace Experience

CTE Course

*Available Starting SY 2021*

Food Production and Processing Workplace Experience courses provide students with work experience in fields related to agricultural production and processing. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships. Participation in FFA student organization activities is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### 18401A001 Basic Agricultural Mechanics

CTE Course

*Available Starting SY 2011*

In this course, theory and hands-on experiences provide opportunities for students to develop basic knowledge and skills in agricultural mechanics. Instructional areas include the basic shop safety, hand and power tool knowledge, fasteners, basic fundamentals of maintaining and repairing small gasoline engines, basic electricity, basic plumbing, concrete, welding, construction, and operating agricultural equipment safely. Improving workplace and computer skills will be a focus. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

## **18 Agriculture, Food, and Natural Resources**

### **18401A002      Agricultural Metal Fabrication**

**CTE Course**

*Available Starting SY 2012*

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

### **18402A001      Advanced Agricultural Mechanics**

**CTE Course**

*Available Starting SY 2011*

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

### **18403A001      Agricultural Construction**

**CTE Course**

*Available Starting SY 2011*

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

## 18 Agriculture, Food, and Natural Resources

### 18403A002      **Advanced Agricultural Construction**

**CTE Course**

*Available Starting SY 2023*

Advanced Agricultural Construction courses include an integrated way to learn geometry through the application in construction. The structural concepts within the course are organized to complement the skills and the knowledge learned in geometry lessons. Students will experience working days on a job site or technical project, as well as classroom experiences, focused on the development and review of geometry concepts. On working days, students will collaborate to build anything from sawhorses and modular furniture to manufactured housing and tiny homes. The course will provide students the opportunity to immediately apply what they are learning about geometry to their projects and buildings. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration, and reinforcement of academic concepts.

### 18403A003      **Advanced AMA— Structures**

**CTE Course**

*Available Starting SY 2023*

Advanced AMA—Structures courses focus on an integrated way to learn geometry through application in construction. The structural concepts within the course are organized to compliment the skills and knowledge learned in geometry lessons. Students experience working days on a job site or technical project, as well as classroom experiences focused on development and review of geometric concepts. Students will collaborate to build projects from sawhorses and modular furniture to manufactured housing and tiny homes. The course will provide students the opportunity to immediately apply what they are learning about geometry to their projects and buildings. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### 18404A001      **Agriculture Welding**

**CTE Course**

*Available Starting SY 2020*

This course will emphasize the development of basic welding skills necessary to succeed in the agricultural metal fabrication industry. Topics of instruction include: welding safety, metal identification and properties, joint design and terminology, metal preparation, use of oxy-acetylene torch , Stick Metal Arc Welding (SMAW) focusing on the flat and horizontal position, Gas Metal Arc Welding (GMAW), project design and construction. Suggested electrodes for this course are E6013 and E6011. Improving workplace and computer skills will be a focus. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership career exploration and reinforcement of academic concepts.

## 18 Agriculture, Food, and Natural Resources

### 18404A002      **Advanced Agricultural Welding**

**CTE Course**

*Available Starting SY 2022*

Advanced Agricultural Welding focuses on the development of advanced welding and metal fabrication techniques utilized within the agricultural industry. Topics of instruction may include welding safety, technical drawings & blueprint reading, welding symbols, welding discontinuities and failures, destructive testing, nondestructive examination, equipment setup, metal preparation, pipe welding, cutting processes, oxy-fuel cutting/welding, shielded metal arc welding, gas metal arc welding, flux cored arc welding, and gas tungsten arc welding processes. Suggested welding positions are flat, horizontal, vertical down, and vertical up. Electrodes taught and used may include E6010, E6011 and E7018. This course should be aligned with an industry-recognized credential. Upon successful completion, it is suggested students receive an industry certification or dual-credit through a local accredited institution. Improving workplace skills will be a focus in this course. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### 18405A001      **Precision Agriculture**

**CTE Course**

*Available Starting SY 2021*

Precision Agriculture courses provide a fundamental understanding of the principles of precision agriculture. Topics may include Global Positioning Systems (GPS); Geographical Information Systems (GIS); yield monitors; remote sensing; drones; grid soil sampling; variable rate application; digital image processing simulator (DIPS); Geodesy, automated cartography (Auto-Carto); land surveying (LS); navigation and guidance to effectively use data to make informed production management decisions. These courses may use spatial analysis models and guidelines for integrating, interpreting, analyzing, and synthesizing geographic data, with a focus on both the implications and limitations of such technologies. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### 18405A002      **Agricultural Engineering**

**CTE Course**

*Available Starting SY 2022*

Throughout the course, students apply technical and engineering skills while becoming competent in the processes used to operate, repair, engineer, and design agricultural structures, engines, and equipment. Students practice technical skills including reading prints, troubleshooting machines, documenting an engine teardown and assembly, reading schematics, building simple machines, using hydraulics, researching machine replacement parts, and calculating production efficiencies. The engineering portion of the course includes prototype development, computer aided design (CAD), 3D printing, documentation of machine processes, machine automation and programming, testing designs for structural integrity, and calculating machine speed and power. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

## 18 Agriculture, Food, and Natural Resources

### 18405A003      Agricultural Engine Maintenance

CTE Course

*Available Starting SY 2022*

This course provides students with the opportunity to learn how to operate, service, and recondition agricultural power units, emphasizing two- and four-cycle small gasoline engines. This class will provide students with opportunities to troubleshoot and repair speed controls, lubrication, ignition, fuel, power transfer, cooling, exhaust, and starting systems; use hand, power, and overhaul tools; and read and interpret service manuals and parts' catalogs. Additional units of instruction may include power transmission, electrical, and hydraulic/pneumatic systems. Applications may include lawn mowers, tractors, tillers, power tools, and so on. Improving workplace skills will be a focus in this course. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### 18405A004      Advanced Agricultural Engine Maintenance

CTE Course

*Available Starting SY 2022*

Courses provide students with knowledge and skills to inspect diagnose, maintain, over the road truck and tractor systems. Specific course topics may include principles underlying diesel engines or multi cylinder gas engines, analyzing electrical circuits and systems, reading and interpreting service manuals, and identifying the principles and components of fuel injection systems; repair and replacement of water pumps, generators, governors, auxiliary and accompanying power units and controls; transmissions, drive lines, and drive axles; brakes, tires, and wheels; steering and suspension systems; electrical and lighting systems; hydraulics and pneumatics; safety codes and regulations; and general shop skills. This class begins with vehicle familiarity, inspection expectations of drivers; inspection, diagnosis and repair for the technician. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts .

### 18405A005      Agricultural Electrical Systems

CTE Course

*Available Starting SY 2022*

This course provides a survey of the theory, terminology, equipment, and practical experience related to electrical applications in agricultural settings. This course typically includes the study of electrical safety, the National Electrical Code, AC and DC circuits, electrical wiring, electric motors and controls, and may cover such skills as those involved in diagramming and building circuits; wiring buildings; installing lighting fixtures, switches, and outlets; and estimating job costs. In this course, safety is stressed, and a career exploration component may be offered. Maintenance and repair skills are often included as course topics. Improving workplace skills will be a focus in this course. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

## 18 Agriculture, Food, and Natural Resources

### 18406A001 Water Treatment

CTE Course

*Available Starting SY 2021*

Water Treatment courses provide instruction regarding the environmental hazards associated with identifying and accepting waste water disposal. Course topics typically include waste water, the steps in wastewater treatment, compliance with applicable regulations, and the use of water-testing instruments and water-treatment equipment to treat wastewater. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### 18447A001 Power, Structural and Technical Systems Independent Study

CTE Course

*Available Starting SY 2021*

Courses in Agricultural Mechanics and Construction Independent Study, often conducted with instructors as mentors, enable students to topics of interest related to agricultural mechanics and/or construction. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular application, to explore a topic in greater detail, or to develop more advanced skills. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### 18448A001 Power, Structural and Technical Systems Workplace Experience

CTE Course

*Available Starting SY 2021*

Power, Structural and Technical Systems Workplace Experience courses provide work experience in fields related to agricultural mechanics and construction. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships. Participation in FFA student organization activities is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

## 18 Agriculture, Food, and Natural Resources

### 18449A001      **Agricultural Machinery Service**

**CTE Course**

*Available Starting SY 2011*

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

### 18449A002      **Basic Physical Science Applications in Agriculture**

**CTE Course**

*Available Starting SY 2011*

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

### 18449A003      **Advanced Physical Science Applications in Agriculture**

**CTE Course**

*Available SY 2011 - 2011*

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

## 18 Agriculture, Food, and Natural Resources

### 18501A001 Wildlife Management

CTE Course

*Available Starting SY 2021*

Often with an emphasis on the conservation of natural resources and frequently including outdoor recreation topics. Wildlife Management courses provide students with the opportunity to understand and appreciate the importance of maintaining the land and ecological systems that enable non-domesticated animals to thrive. Wildlife Management courses emphasize how humans and animals may both take advantage of the same land or how to gain economic benefits from the land while not degrading its natural resources or depleting plant or animal populations. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### 18502A001 Forestry

CTE Course

*Available Starting SY 2021*

Forestry courses provide students with the information and experience necessary for the cultivation, management, and care of forests or timberlands. Forestry courses cover topics such as the processes of regeneration and reforestation, harvesting and conservation of natural resources, erosion and pest control, trail development and maintenance, mapping and surveying, operation of forestry tools, government regulations, environmental stewardship, and recreational use of forests. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### 18502A002 Outdoor Park & Recreational Management

CTE Course

*Available Starting SY 2023*

Outdoor Park & Recreation Management courses focus on designing facilities, developing educational programs, and managing resources for use in public recreation. Students will maintain and operate equipment for maintaining wildlife habitat and supporting a variety of public recreational activities and facilities. Throughout the course, students will develop marketing and programming skills for park development, apply management practices to park operations, and learn the systems required to maintain public safety. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects are an integral course component for leadership development, career exploration, and reinforcement of academic concepts.

## 18 Agriculture, Food, and Natural Resources

### **18504A001 Environmental Science**

**CTE Course**

*Available Starting SY 2011*

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

### **18504A002 Natural Resources Conservation and Management**

**CTE Course**

*Available Starting SY 2011*

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

### **18504A003 Basic Natural Resource Management**

**CTE Course**

*Available Starting SY 2021*

This course is designed to introduce students to management and conservation skills and provide them with basic natural resource management knowledge that can be further developed in more advanced courses. Units include introduction to: understanding natural resources science and management, understanding of conservation and different practices, ecological concepts and scientific principles, impacts of pollution, fish and wild ecology, fire ecology, renewable and nonrenewable resources, and human impacts on wildlife. Career exploration will be discussed including: park ranger, game warden, campground manager, forester, conservation officer, wildlife manager, and related occupations. Improving computer and workplace skills will be a focus. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

## 18 Agriculture, Food, and Natural Resources

### 18504A004 Basic Environmental Science

CTE Course

*Available Starting SY 2022*

This course provides basic scientific knowledge and understanding of how our world works from an environmental perspective. Topics covered include: basic principles of ecosystem function; biodiversity and its conservation; Wildlife population growth; water resources and management; water, air and soil pollution; climate change; energy resources, and sustainability. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### 18504A005 Advanced Environmental Science & Issues

CTE Course

*Available Starting SY 2023*

Advanced Environmental Science and Issues requires that students identify and analyze natural and human-made environmental problems, evaluate the relative risks associated with these problems, and examine alternative solutions for resolving or preventing them. Environmental science is interdisciplinary, embracing topics from geology, biology, environmental studies, environmental science, chemistry, and geography. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects are an integral course component for leadership development, career exploration, and reinforcement of academic concepts.

### 18505A001 Hunter Education

CTE Course

*Available Starting SY 2021*

Hunter Safety courses provide students with the basic skills and knowledge of hunter safety and responsibility. Topics typically include hunter responsibility and ethics; tree stand safety; firearms and ammunition; field safety; first aid; bowhunting; muzzle loading; wildlife conservation and identification; and Illinois state regulations. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### 18505A002 Urban Forestry

CTE Course

*Available Starting SY 2021*

Urban Forestry courses provide introduction to principles and practices useful in the management of trees and forests in urban settings. Topics typically include the benefits of trees and forestry; duties and responsibilities of municipal foresters; street tree management planning; and management strategies consistent with the biological, physical, economic and social constraints of the urban environment. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

## 18 Agriculture, Food, and Natural Resources

### **18506A001      Alternative Energy**

**CTE Course**

*Available Starting SY 2021*

Alternative Energy courses help students identify renewable and nonrenewable energy sources and natural resources. Topics typically include alternative energy sources and their respective advantages and disadvantages; the impact of conventional and alternative energy sources on the environment; the efficiency of energy production from various sources; and careers in the fields of alternative energy and sustainability.

### **18547A001      Natural Resource Systems Independent Study**

**CTE Course**

*Available Starting SY 2021*

Courses in Natural Resource Systems Independent Study, often conducted with instructors as mentors, enable students to explore topics of interest related to natural resources. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular application, to explore a topic in greater detail, or to develop more advanced skills. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts

### **18548A001      Natural Resources Systems Workplace Experience**

**CTE Course**

*Available Starting SY 2021*

Natural Resources Workplace Experience courses provide students with work experience in fields related to natural resources. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships. Participation in FFA student organization activities is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### **18997A001      Agricultural Biotechnology Systems Independent Study**

**CTE Course**

*Available Starting SY 2021*

Courses in Agricultural Biotechnology Systems Independent Study, often conducted with instructors as mentors, enable students to explore topic of interest related to agriculture, food, and natural resources. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular application, to explore a topic in greater detail, or to develop more advanced skills. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

## 18 Agriculture, Food, and Natural Resources

### **18997A002 Environmental Service Systems Independent Study**

**CTE Course**

*Available Starting SY 2021*

Courses in Environmental Service Systems Independent Study, often conducted with instructors as mentors, enable students to explore topic of interest related to agriculture, food, and natural resources. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular application, to explore a topic in greater detail, or to develop more advanced skills. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### **18997A003 Biotechnology Systems Workplace Experience**

**CTE Course**

*Available SY 2021 - 2021*

Agricultural Biotechnology Systems Workplace Experience courses provide students with work experience in fields related to agricultural biotechnology. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships. Participation in FFA student organization activities is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### **18997A004 Environmental Services Systems Workplace Experience**

**CTE Course**

*Available SY 2021 - 2021*

Environmental Services Systems Workplace Experience courses provide work experience in fields related to environmental services systems. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships. Participation in FFA student organization activities is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

## 18 Agriculture, Food, and Natural Resources

### 18998A001      Agricultural Cooperative Education

CTE Course

*Available SY 2011 - 2021*

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

### 18998A002      Supervised Agricultural Experiences

CTE Course

*Available SY 2016 - 2021*

This course is designed to establish, improve, and/or expand knowledge and skills in various agricultural careers. Students will gain credit by establishing or continuing a Supervised Agricultural Experience (SAE) project at their home, at a business, or at their school often occurring outside the normal school day. SAE projects are typically entrepreneurial, placement or research based. Students are encouraged to add additional projects, experiences, scope, and growth involving managerial and decision making skills. Students will be required to verify their experiences by keeping written or computerized records including: business agreements, budgets, inventories, daily activities, hours worked, income and expenses, total earnings, depreciation, and net worth. Instructor supervision will be conducted to the student's home, place of employment, or location of project. SAE records should be evaluated at least once per month. In addition, classroom time may be incorporated for foundational knowledge related to the SAE. SAE lessons are integrated into each agricultural course which can also provide foundation al knowledge. SAE participation can lead to fulltime employment, scholarships, and awards through the FFA.

## 18 Agriculture, Food, and Natural Resources

### **18998A003      Agriculture, Food & Natural Resources Workplace Experience**

**CTE Course**

*Available Starting SY 2021*

Agriculture, Food & Natural Resources Workplace Experience courses provide work experience in fields related to the Agriculture, Food, & Natural Resources cluster. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### **18998A004      Environmental Services Systems Workplace Experience**

**CTE Course**

*Available Starting SY 2021*

Environmental Services Systems Workplace Experience courses provide work experience in fields related to environmental services systems. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships. Participation in FFA student organization activities is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

## 18 Agriculture, Food, and Natural Resources

### **18998A005      Agricultural Biotechnology Systems Workplace Experience**

**CTE Course**

*Available Starting SY 2021*

Agricultural Biotechnology Systems Workplace Experience courses provide students with work experience in fields related to agricultural biotechnology. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships. Participation in FFA student organization activities is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### **18998A006      GAST Workplace Experience**

**CTE Course**

*Available Starting SY 2023*

Growing Agricultural Science Teachers (GAST) Workplace Experience courses provide work experience in which the agricultural instructor serves as a mentor to enable students to explore School-based Agricultural Education and Agricultural Literacy. Students can receive college credit and individual compensation through a college or university offering GAST junior internships. Goals must be set cooperatively by the student and teacher. These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships. Participation in FFA student organization activities is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### **18999A001      Foundational Supervised Agricultural Experience (SAE)**

**CTE Course**

*Available Starting SY 2021*

This course is designed to establish, improve, and/or expand knowledge and skills in various agricultural careers. Students will increase their awareness of agricultural careers through the following components: Career Exploration and Planning; Employability Skills for College and Career Readiness; Personal Financial Management and Planning; Workplace Safety; and Agricultural Literacy (may be transitioned to Immersion SAE). Participation in FFA student organization activities and exploration of Immersion Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

## 18 Agriculture, Food, and Natural Resources

### **18999A002 Applied Mathematics in Agriculture (AMA)**

**CTE Course**

*Available Starting SY 2023*

Applied Mathematics in Agriculture (AMA) courses apply knowledge and skills related to mathematics, including algebra, geometry, and data analysis in the context of Agribusiness Systems and Power, Structural, and Technical Systems. Topics covered may include whole numbers, fractions, decimals, ratios, measurements, basic algebra, plane geometry, solid figures, triangle geometry, intermediate algebra, and statistics. Course topics may be applied in a class business and/or structural project. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### **18999A003 Drone Operation and Maintenance**

**CTE Course**

*Available Starting SY 2023*

Drone Operation and Maintenance courses expose students to the versatile uses of unmanned aerial systems (UAS) in agriculture, food and natural resource industries. Students will engage in a variety of drone-related topics including assembly, maintenance, repair, operation, implementation, and related careers. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### **68003A001 Exploratory Agricultural Science**

**CTE Course**

*Available Starting SY 2012*

This exploration course provides the opportunity to learn fundamental concepts in agriculture to serve as a foundation for future courses and to inform students about the industry that is so vital to society and to their future. Major units of instruction include an introduction to the agricultural industry, animal science, plant science, horticulture science, agribusiness, environmental science, agricultural mechanics, food science, and leadership and personal development. Participation in FFA student organization activities is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

### **68003A002 Exploratory Horticultural Science**

**CTE Course**

*Available Starting SY 2012*

This exploration course provides the opportunity to learn fundamental concepts in horticulture to serve as a foundation for future courses and to inform students about the fastest growing sector of the Agricultural Industry. Major units of instruction include introduction to the horticulture industry, plant science, plant identification, plant propagation, marketing products from horticulture, and leadership and personal development. Participation in FFA student organization activities is an integral course component for leadership development, career exploration and reinforcement of academic concepts.

## 19 Human Services

### **19001A001 Human Services Career Exploration**

**CTE Course**

*Available Starting SY 2019*

Human Services Career Exploration courses introduce and expose students to the career opportunities pertaining to the provision of personal and consumer services for other human beings. Course topics vary and may include (but are not limited to) caring for others, education, cosmetology, apparel/textiles, entrepreneurship, labor laws, and customer service. Course activities depend upon the careers being explored.

### **19051A001 Child Care**

**CTE Course**

*Available Starting SY 2020*

Child Care courses provide students with knowledge about the physical, mental, emotional, and social growth and development of children from birth through pre-school age. Main topics include the fundamentals of working with infants, toddlers, and older children; providing healthy environments; evaluating child care settings; and examining the practices, regulations, and opportunities in the child care industry. Often Child Care courses provide students with practical experience, including observation time in a child care center. Advanced topics may include various learning theories; development of activities; operation of a child care center; recognition of childhood diseases, abuse, and neglect; and first aid/emergency training.

### **19052A001 Child Development and Parenting**

**CTE Course**

*Available Starting SY 2011*

Child Development and Parenting addresses the knowledge, skills, attitudes, and behaviors associated with supporting and promoting optimal growth and development of infants and children. The focus is on research-based nurturing and parenting practices and skills, including brain development research, that support positive development of children. Students will explore opportunities in human services and education-related careers and develop a career portfolio.

### **19053A001 Human Development and Family Wellness**

**CTE Course**

*Available SY 2011 - 2020*

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

## 19 Human Services

### **19053A002 Elder Care**

**CTE Course**

*Available Starting SY 2019*

Elder Care courses emphasize the care of human beings as they grow older. These courses involve the study of the biological, physiological, social, and psychological needs and concerns of the elderly, and deal with the aging process, death, and dying in a realistic manner. Elder Care courses may cover work and personal habits appropriate to the field, and may also offer the opportunity to explore various careers.

### **19054A001 Care and Learning Services Occupations**

**CTE Course**

*Available Starting SY 2011*

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

### **19055A001 Care and Learning Services Management**

**CTE Course**

*Available Starting SY 2011*

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

### **19098A001 Elder Care Workplace Experience**

**CTE Course**

*Available Starting SY 2021*

Elder Care Workplace Experience courses provide students with work experience in fields related to caring for the elderly. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

## 19 Human Services

### **19098A002          Child Care Workplace Experience          CTE Course**

*Available Starting SY 2021*

Child Care Workplace Experience courses provide students with work experience in fields related to caring for children. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### **19101A001          Cosmetology I          CTE Course**

*Available Starting SY 2011*

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

### **19101A002          Cosmetology II          CTE Course**

*Available Starting SY 2011*

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

## 19 Human Services

### 19102A001 Barbering I

CTE Course

*Available Starting SY 2011*

This is the first year of a two year program in Barbering. The barbering program must be approved and licensed by the Illinois Department of Financial and Professional Regulations, Division of Professional Regulation and meet all state and federal regulations. This course offers students curriculum in both theory and practice in the following areas as they relate to the practice of barber science and art: anatomy; physiology; skin diseases; hygiene and sanitation; barber history; barber law; hair cutting and styling; shaving, shampooing, and permanent waving; massaging; and barber implements as they relate to the Barber, Cosmetology, Esthetics, and Nail Technology Act. Knowledge, skills, and activities completed in this course will help prepare students for Barbering II, while earning hours towards licensure.

### 19102A002 Barbering II

CTE Course

*Available Starting SY 2011*

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

### 19105A001 Nail Technology I

CTE Course

*Available Starting SY 2011*

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

## 19 Human Services

### 19105A002 Nail Technology II

CTE Course

*Available Starting SY 2021*

The Nail Technology program must be approved and licensed by the Illinois Department of Financial and Professional Regulations, Division of Professional Regulation and meet all state and federal regulations. Nail Technology II builds on the skills and knowledge students developed in Nail Technology I. Courses may be a combination of classroom instruction and hands on experience in the following areas: manicures, pedicures, machines and products used in nail technology, and shop management, sanitation and interpersonal relations as they relate to the Barber, Cosmetology, Esthetics, and Nail Technology Act, as well as labor and compensation laws. Knowledge, skills, and activities completed in this course will help prepare to become a licensed nail technician, while earning hours towards the 350 hours of instruction in nail technology.

### 19148A001 Cosmetology Workplace Experience

CTE Course

*Available Starting SY 2021*

Cosmetology Workplace Experience courses provide students with work experience in the cosmetology field. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### 19148A002 Barbering Workplace Experience

CTE Course

*Available Starting SY 2021*

Cosmetology Workplace Experience courses provide students with work experience in the barbering field. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

## 19 Human Services

### 19148A003 Nail Technician Workplace Experience

CTE Course

*Available Starting SY 2021*

Nail Technician Workplace Experience courses provide students with work experience in the nail technology field. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### 19149A001 Introduction to Natural Hair Care and Hair Braiding

CTE Course

*Available Starting SY 2025*

This course introduces students to the field of natural hair care and braiding. Students will learn the impact of historical events on the industry as well as examine current and future trends. Then students will learn safety and infection control methods necessary to advance in the subsequent courses. Basic concepts such as: History of hair braiding, disinfection and sanitation, bacteriology, disorders and diseases of the hair and scalp, personal hygiene, public health, professional ethics, tools and equipment, basic styling knowledge, client consultation and face shapes, growth patterns, braid removal and scalp care, styles and sectioning, and client education, pre-care, post-care, home care and follow up services.

### 19149A002 Advanced Natural Hair Care and Hair Braiding

CTE Course

*Available Starting SY 2025*

This course will begin with general grooming and styling techniques to perform on clients. Students will use various styling tools and equipment to achieve a client's desired outcome. Then students will learn advanced styling techniques such as the principles of braiding and braid extensions. Concepts such as: single braids with and without extensions, cornrows with and without extensions, twists and knots, multiple strands, hair locking, weaving/sewn-in, other procedures as they relate to hair-braiding; and product knowledge as it relates to hair braiding.

### 19151A001 Foundations to Teaching

CTE Course

*Available Starting SY 2011*

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

## 19 Human Services

### **19152A001 Educational Methodology**

**CTE Course**

*Available Starting SY 2011*

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

### **19153A001 Early Childhood Education**

**CTE Course**

*Available Starting SY 2011*

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

### **19154A001 Classroom Management**

**CTE Course**

*Available Starting SY 2021*

Classroom Management courses presents best practices in classroom and behavior management. Topics will include: organizing time, instruction, materials, and classroom space; strategies for managing individual and large group student behaviors; developing relationships with students, staff, and parents; managing transitions, lab activities, and other arrangements for classrooms in general and special education.

### **19154A002 Diversity in Education**

**CTE Course**

*Available Starting SY 2021*

The Diversity in Education course prepares future teachers to effectively serve and teach children from diverse backgrounds. The course topics could include: methods of creating an environment of respect and rapport; recognizing the need for cultural competence to support all students for success; acknowledging, responding to, and celebrating diverse cultures; identifying, reflecting on, and countering students' own identities and implicit biases; and teaching students to recognize their own agency and develop the needed skills to advocate effectively within a school community.

### **19155A001 Instructional Technology**

**CTE Course**

*Available Starting SY 2021*

Instructional Technology courses address the implementation of technical devices and processes that are used to improve and facilitate learning. Content includes, but is not limited to, productivity tools, interactive multimedia, communications, educational software and hardware, instructional applications, and ethical, legal, social, and professional issues.

## 19 Human Services

### **19198A001      General Education Workplace Experience**

**CTE Course**

*Available Starting SY 2021*

General Education Workplace Experience courses provide students with work experience in fields related to general education. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### **19198A002      Early Childhood Education Workplace Experience**

**CTE Course**

*Available Starting SY 2021*

Early Childhood Education Workplace Experience courses provide work experience in fields related to Early Childhood Education. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### **19198A003      Education & Training Workplace Experience**

**CTE Course**

*Available Starting SY 2022*

Education & Training Workplace Experience courses provide work experience in fields related to the Education & Training cluster. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

## 19 Human Services

### **19199A001 Diversity in Education**

**CTE Course**

*Available SY 2020 - 2020*

The Diversity in Education course prepares future teachers to effectively serve and teach children from diverse backgrounds. The course topics could include: methods of creating an environment of respect and rapport; recognizing the need for cultural competence to support all students for success; acknowledging, responding to, and celebrating diverse cultures; identifying, reflecting on, and countering students' own identities and implicit biases; and teaching students to recognize their own agency and develop the needed skills to advocate effectively within a school community

### **19201A001 Textiles and Design I**

**CTE Course**

*Available Starting SY 2011*

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

### **19202A001 Clothing/Textile Maintenance**

**CTE Course**

*Available Starting SY 2021*

Clothing/Textile Maintenance courses provide students with the knowledge and skills to clean, care for, and maintain clothing and textiles. Course topics typically include dry cleaning and laundering techniques, identifying fabrics and the optimal cleaning agents and processes, instruction in altering and repairing garments, and the safe use of the equipment, tools, and agents.

### **19203A001 Textiles and Design II**

**CTE Course**

*Available Starting SY 2011*

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

## 19 Human Services

### **19204A001 Fashion, Apparel, and Textile Services Occupations CTE Course**

*Available Starting SY 2011*

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

### **19204A002 Textile and Design Occupations CTE Course**

*Available Starting SY 2011*

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

### **19206A001 Facilities Planning and Management Services CTE Course**

*Available SY 2011 - 2020*

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

### **19206A002 Home Furnishings Production CTE Course**

*Available Starting SY 2021*

Home Furnishings Production courses enable students to plan, select, and construct upholstery, slip covers, draperies and other window treatments, and other home accessories. Some courses may emphasize upholstery exclusively. Course content typically includes proper use of equipment, interior decorating principles, and employability skills.

## 19 Human Services

### 19248A001 Apparel and Textiles Workplace Experience

CTE Course

*Available Starting SY 2021*

Apparel and Textiles Workplace Experience courses provide students with work experience in fields related to apparel and textiles. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### 19248A002 Interior Design Workplace Experience

CTE Course

*Available Starting SY 2021*

Interior Design Experience courses provide students with work experience in fields related to interior design. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### 19251A001 Introduction to Family and Consumer Sciences Careers

CTE Course

*Available Starting SY 2021*

This course introduces students to the field of family and consumer sciences and the many career opportunities available in this broad field. The course includes theory and laboratory experiences in the following content areas: Nutrition and culinary arts; textiles and design; family, career, and community leadership development; resource management; human development and life-long learning; facility design, care, and management; and interpersonal relationships and life management skills.

### 19251A002 Family and Consumer Sciences

CTE Course

*Available Starting SY 2021*

Family and Consumer Sciences courses help students to develop the knowledge and skills that are used to manage one's family and career efficiently and productively. Course topics typically include foods and nutrition; apparel; child care and development; housing, interior design, and maintenance; consumer decisions; personal financial management; interpersonal relationships; and careers available in family and consumer sciences.

## 19 Human Services

### **19252A001 Food Preparation and Health Management**

**CTE Course**

*Available Starting SY 2021*

Formerly known as Food and Nutrition, Food Preparation and Health Management courses provide students with an understanding of food's role in society, instruction in how to plan and prepare meals, and information about the nutritional and health benefits of minimizing processed and prepared food and prepackaged/prepared meals from one's diet. These courses not only build on the basic skills of food preparation but also address financial considerations and recipe conversion to make foods healthier. Some courses place a heavier emphasis on a balanced diet, while others concentrate on specific types of food preparation (such as low sodium, low fat, or increased whole foods). These courses will also address current issues such as organic foods and vegan cooking.

### **19253A001 Nutrition and Wellness**

**CTE Course**

*Available Starting SY 2021*

Nutrition and Wellness courses focus on how physical, mental, social, psychological, and emotional wellness are related to food, food selection, and health. Topics typically include dietary needs across one's lifespan, stress management, special dietary issues, and eating disorders as well as societal and genetic health issues that are addressed through the prevention education component of the class. Other topics covered range from healthy food selection, label reading, and diet analysis to understanding additives, making wise food choices, and dealing with food allergies.

### **19253A002 Nutrition and Diet Therapy**

**CTE Course**

*Available Starting SY 2025*

Nutrition and Diet Therapy courses are designed to prepare students for health care professions and food service professions. Topics should include fundamentals of nutrition, principles of diet therapy, exploration of the relationship between nutrition and disease, and the promotion of healthy eating styles and proper food preparation for all age groups.

### **19254A001 Food Science**

**CTE Course**

*Available Starting SY 2021*

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

## 19 Human Services

### 19259A001 Work and Family Relationships

CTE Course

*Available Starting SY 2021*

Work and Family Relationship is a project-based course that emphasize building and maintaining health interpersonal relationship among families, communities, society, and workplace. These courses often emphasize (but are not limited to) topics such as balancing the responsibilities of a family and career, human sexuality and reproduction, parenthood and the function of the family unit, the family life cycle, life stages, and social interactions and interpersonal relationships. The course uses communication, leadership and management methods to develop knowledge and behaviors necessary for individuals to become independent, contributing, and responsible participants in family, community, and career settings. analyzing personal standards, needs, aptitudes and goals; roles and responsibilities of living independently and as a family member; demonstrating goal-setting and decision-making skills; identifying and utilizing community resources; and developing effective relationships to promote communication with others. The course provides students content to identify resources that will assist them in managing life situations.

### 19261A001 Human Growth and Development

CTE Course

*Available Starting SY 2021*

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

### 19262A001 Consumer Economics/Personal Finance

CTE Course

*Available Starting SY 2021*

Consumer Economics/Personal Finance courses provide students with an understanding of the concepts and principles involved in managing one's personal finances. These courses emphasize lifespan goal-setting, individual and family decisionmaking, and consumer rights as well as topics that are commonly associated with personal finance so that one can become a financially responsible consumer. Topics may include savings and investing, credit, insurance, taxes and social security, spending patterns and budget planning, contracts, and consumer protection. These courses may also investigate the effects of the global economy on consumers and the family.

## 19 Human Services

### **19298A001 Work and Family Studies Workplace Experience**

**CTE Course**

*Available Starting SY 2021*

Work and Family Studies Workplace Experience courses provide students with work experience in a field related to family and consumer sciences. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### **19299A001 Family and Consumer Sciences Communications**

**CTE Course**

*Available Starting SY 2021*

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

### **19301A001 Counseling and Mental Health**

**CTE Course**

*Available Starting SY 2021*

Counseling and Mental Health courses provide students with the knowledge and skills necessary to pursue a counseling and mental health career through simulated environments. These courses allow students to apply their knowledge of ethical and legal responsibilities, the limitations of these responsibilities, and the implications of their actions.

## 19 Human Services

### 19998A001 Social Work Workplace Experience

CTE Course

*Available Starting SY 2021*

Social Work Workplace Experience courses provide students with work experience in the social work field. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### 19998A002 Nutrition and Wellness Workplace Experience

CTE Course

*Available Starting SY 2021*

Nutrition and Workplace Experience courses provide students with work experience in a field related to the provision of human services. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### 19998A003 Human Services Workplace Experience

CTE Course

*Available Starting SY 2022*

Human Services Workplace Experience courses provide work experience in fields related to the Human Services cluster. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

## 19 Human Services

### **22201A001 Introduction to Family and Consumer Sciences Careers**

**CTE Course**

*Available SY 2011 - 2021*

This course introduces students to the field of family and consumer sciences and the many career opportunities available in this broad field. The course includes theory and laboratory experiences in the following content areas: Nutrition and culinary arts; textiles and design; family, career, and community leadership development; resource management; human development and life-long learning; facility design, care, and management; and interpersonal relationships and life management skills.

### **22203A001 Food Science**

**CTE Course**

*Available SY 2011 - 2021*

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

### **22204A001 Parenting**

**CTE Course**

*Available SY 2011 - 2021*

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

## 19 Human Services

### **22207A001 Family and Career Relationships**

**CTE Course**

*Available SY 2011 - 2021*

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

### **22210A001 Family Resource Management and Planning**

**CTE Course**

*Available SY 2011 - 2021*

This course focuses on the identification and management of personal and family resources to meet the needs, values, and wants of individuals and families throughout the life cycle. The course utilizes a variety of project-based experiences and service learning opportunities to gain knowledge and expertise in understanding and applying management skills, with consideration to diverse social, economic, technological, environmental, and cultural characteristics of individuals and families. Topics include: consumer rights and responsibilities in the marketplace; financial responsibility and decision making; planning and money management; credit and debt; risk management and insurance; saving and investment; homeownership; state and federal taxes; electronic banking; and current issues in the economy.

### **22211A001 Interior Design: Residential, Commercial, and Public Space**

**CTE Course**

*Available SY 2011 - 2021*

This course provides basic knowledge and skills needed to select, acquire, furnish, maintain, and manage residential and commercial environments to meet the needs of the users/occupants. The course includes the application of the interior design elements and principles; selection and care of furnishings, equipment and accessories in relation to socio-economic factors, trends, personal tastes and characteristics, as well as physical and psychological needs; safety, sanitation, and efficiency factors in interior design; and evaluating use and care of textiles. This project based course investigates a variety of related career opportunities, including entrepreneurship. Emphasis is placed on the application of project management skills.

## 19 Human Services

**22249A001      Family and Consumer Sciences Communications**

**CTE Course**

*Available SY 2013 - 2021*

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



## 20 Transportation, Distribution and Logistics

### **20053A003 Introduction to Aviation**

**CTE Course**

*Available Starting SY 2023*

Introduction to Aviation provide students with an introduction to the science of flight and typically include the history, possible career paths within the aviation industry, regulations, terminology, and foundational engineering principles of aviation. Possible course topics include physics of flight, the relationships of weight and balance, principles of navigation and flight control, ground and airport operations and services, and Federal Aviation Agency regulations.

### **20055A001 Pilot Training**

**CTE Course**

*Available Starting SY 2021*

Pilot Training courses prepare students to become pilots by participating in flight training, ground school, and simulator instruction. Topics covered typically include preflight operations; flight maneuvering with reference to ground objects; flying at critically slow air speeds and recovering from stalls; takeoffs and landings; controlling and maneuvering an aircraft; cross country flying; night flying; and emergency operation. Other course content may include meteorology, aerodynamics, navigation, physiology, and airfield and flight environments.

### **20098A001 Aircraft Technician Workplace Experience**

**CTE Course**

*Available Starting SY 2021*

Aircraft Technician Workplace Experience courses provide students with work experience in fields related to the maintenance of vehicles and engines. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### **20098A002 Pilot and Flight Crew Workplace Experience**

**CTE Course**

*Available Starting SY 2021*

Pilot and Flight Crew Workplace Experience courses provide students with work experience in fields related to the maintenance of vehicles and engines. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

## 20 Transportation, Distribution and Logistics

### **20098A003 Truck/Bus Operation Workplace Experience**

**CTE Course**

*Available Starting SY 2021*

Truck/Bus Operation Workplace Experience courses provide students with work experience in fields related to the maintenance of vehicles and engines. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### **20098A004 Forklift Operation Workplace Experience**

**CTE Course**

*Available Starting SY 2021*

Forklift Operation Workplace Experience courses provide students with work experience in fields related to the maintenance of vehicles and engines. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### **20099A001 Drone Operation and Maintenance**

**CTE Course**

*Available Starting SY 2020*

Drone Operation and Maintenance courses introduce students to the fundamentals of flying drones. Topics covered typically include FAA rules and regulations; types and capabilities of unmanned aircraft; drone piloting; aerial photography and videography; maintenance and preflight procedures; and aeronautical decision-making. Topics should also include an exploration of the applications of drone operation and maintenance into the program(s) offered. Course should prepare students for attainment of the Remote Pilot Certificate from the FAA and instructor should hold this certificate.

## 20 Transportation, Distribution and Logistics

### **20101A001 Energy Utilization Technology**

**CTE Course**

*Available Starting SY 2011*

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

### **20101A002 Energy & Power**

**CTE Course**

*Available Starting SY 2021*

Energy & Power courses focus on one or several aspects of energy and power in transportation and work. Course content may include various sources of energy and their use in society (for example, characteristics, availability, conversion, storage, environmental impact, and socioeconomic aspects of various energy sources); principles involved in various means of energy transfer, such as electricity/electronics, hydraulics, pneumatics, heat transfer, and wind/nuclear/solar energies; and the transmission and control of power through mechanical or electrical devices such as motors and engines.

### **20101A003 Hydraulics and Pneumatics**

**CTE Course**

*Available Starting SY 2023*

Hydraulics and Pneumatics courses introduce students to the components, circuits, and principles of hydraulic and pneumatic power. Students will develop skills and competencies to understand machine behavior and troubleshoot malfunctions. The course should incorporate machine fluid and pneumatic power and electrical behavior together to strengthen students' understanding of real-world applications within their program(s).

### **20102A001 Energy and Power of Transportation Systems**

**CTE Course**

*Available Starting SY 2021*

Energy and Power of Transportation Systems will prepare students to meet the expectations of employers in this industry and to interact and relate to others. Students will learn the technologies used to provide products and services in a timely manner. The businesses and industries of the Transportation, Distribution, and Logistics Career Cluster are rapidly expanding to provide new career and career advancement opportunities. Performance requirements will include academic and technical skills. Students will need to understand the interaction between various vehicle systems, which could include engines, transmissions, brakes, fuel, cooling, and electrical. Students will also learn about the logistics used to move goods and services to consumers, as well as the components of transportation infrastructure.

## 20 Transportation, Distribution and Logistics

### **20104A001 Automotive Technician I**

**CTE Course**

*Available Starting SY 2011*

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

### **20104A002 Automotive Technician II**

**CTE Course**

*Available Starting SY 2011*

This course is a continuation of and builds on the skills and concepts introduced in Automotive Technician I. This course includes instructional units in alternative fuel systems, computerized diagnostics, new vehicle servicing, automotive heating and air conditioning, transmissions, testing and diagnostics, drive train and overall automobile performance.

### **20106A001 Beginning Automotive Services**

**CTE Course**

*Available Starting SY 2012*

Beginning Automotive Service course emphasizes preventative auto maintenance and automobile troubleshooting. Course content typically includes tune-up, oil change, and lubrication skills; tire replacement, alignment, and balancing; and basic knowledge of brake, cooling, electrical, emission, fuel, ignition, steering, suspension, and transmission systems.

### **20107A001 Diesel Mechanics I**

**CTE Course**

*Available Starting SY 2013*

Diesel Mechanics I courses prepare students to maintain and repair diesel engines and related systems. Specific course topics may include principles underlying diesel engines, analyzing electrical circuits and systems, troubleshooting and repairing cooling systems, testing and repairing air conditioning charging systems, reading and interpreting service manuals, and identifying the principles and components of fuel injection systems. Courses may also cover safety, employability skills, and entrepreneurship.

### **20107A002 Diesel Mechanics II**

**CTE Course**

*Available Starting SY 2021*

Diesel Mechanic II includes advanced knowledge of the function, diagnosis, and service of diesel equipment systems. Rapid advances in diesel technology have created new career opportunities and demands in the transportation industry. This course provides the advanced knowledge, skills, and technologies required for employment in transportation systems. Courses may also cover safety, employability skills, and entrepreneurship.

## 20 Transportation, Distribution and Logistics

### **20109A001 Small Vehicle Mechanics**

**CTE Course**

*Available Starting SY 2021*

Small Vehicle Mechanics courses equip students with the knowledge and skill to repair and maintain engines in small vehicles (e.g., motorcycles, all-terrain vehicles, snowmobiles, and mopeds). Topics include (but are not limited to) maintaining frames and suspension, wheels and brakes, and drive trains; servicing fuel, exhaust, and electrical systems; performing tune-ups; and maintaining and repairing engines. Students may also learn safety on the job, employability skills, and entrepreneurship.

### **20110A001 Small Engine Repair**

**CTE Course**

*Available Starting SY 2011*

Small engine repair is an instructional program that prepares individuals to troubleshoot, service, and repair a variety of small internal-combustion engines, involving both two and four cycle engines used on portable power equipment. Planned activities will allow students to become knowledgeable of fundamental principles and technical skills related to troubleshooting, repairing, identifying parts and making precision measurements. Safety will be a key component of this class. Students will also be exposed to career opportunities related to small engines.

### **20110A002 Small Engine Repair II**

**CTE Course**

*Available SY 2011 - 2020*

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

### **20110A003 Advanced Small Engine**

**CTE Course**

*Available Starting SY 2022*

This course will be designed to provide the student with the opportunity to complete specialized study in the service and repair of small engines and related systems. Planned activities will allow students to become knowledgeable of advanced principles and technical skills related to preventative maintenance, troubleshooting, repairing, identifying parts and making precision measurements with two and four cycle engines and related systems. Other areas that will be covered deal with fuel supply systems, lubrication systems, cooling systems, electrical systems, ignition systems, drive train and chassis systems. Safety will be a key component of this class. Students will also be exposed to career opportunities related to small engines.

## 20 Transportation, Distribution and Logistics

### **20112A001 Heavy Equipment Technician I**

**CTE Course**

*Available Starting SY 2011*

This course introduces students to the basic skills needed to repair and maintain heavy equipment found in the manufacturing industry. Topics covered in this course include safety, blueprint reading basic hand and power tools, introductory hydraulics and pneumatics, orientation to computer diagnostics, basic electricity and electronics, and an introduction to welding technology.

### **20112A002 Heavy Equipment Technician II**

**CTE Course**

*Available Starting SY 2011*

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

### **20113A001 Aircraft Technician I**

**CTE Course**

*Available Starting SY 2011*

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

### **20113A002 Aircraft Technician II**

**CTE Course**

*Available Starting SY 2011*

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

## 20 Transportation, Distribution and Logistics

### **20116A001 Auto-Body I**

**CTE Course**

*Available Starting SY 2011*

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

### **20116A002 Auto-Body II**

**CTE Course**

*Available Starting SY 2011*

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

### **20119A001 Hybrid Engines**

**CTE Course**

*Available Starting SY 2021*

Hybrid Engines courses introduce students to the fundamentals of hybrid electric vehicles. These courses explore the hybrid power plant and may include such topics as hybrid batteries, high- and low-voltage systems, inverters, safety procedures, hybrid maintenance and diagnostics, and alternative fuels.

### **20119A002 Battery Technologies**

**CTE Course**

*Available Starting SY 2023*

Battery Technologies applies the technologies used in modern battery storage systems for electric vehicles. Topics could include battery chemistries, charging and discharging for EV application, thermal management, safe handling of cells and battery packs, manufacturing practices of battery packs and installation of battery packs in a variety of applications.

## 20 Transportation, Distribution and Logistics

### **20148A001 Auto-body Technician Workplace Experience**

**CTE Course**

*Available Starting SY 2021*

Auto-body Technician Workplace Experience courses provide students with work experience in fields related to the maintenance of vehicles and engines. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### **20148A002 Automotive Technician Workplace Experience**

**CTE Course**

*Available Starting SY 2021*

Automotive Technician Workplace Experience courses provide students with work experience in fields related to the operation of vehicles. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### **20151A001 Distribution and Logistics**

**CTE Course**

*Available Starting SY 2021*

Distribution and Logistics courses provide training for entry-level employment in distribution and logistics. This course focuses on the business planning and management aspects of distribution and logistics. To prepare for success, students will learn, reinforce, experience, apply, and transfer their knowledge and skills related to distribution and logistics. Topics could include the comparative advantages of various forms of transportation, distribution networks, processes for tracking large shipments of material, transportation of goods in a safe and secure manner, and packaging.

### **20152A001 Warehouse Operations I**

**CTE Course**

*Available Starting SY 2011*

This course provides planned learning activities designed to allow students to gain knowledge and skills applicable to the Parts, Warehousing, and Inventory Management Operations occupation. Students are instructed in areas of safety, inventory management, warehouse operations, and inventory control.

## 20 Transportation, Distribution and Logistics

### **20152A002 Warehouse Operations II**

**CTE Course**

*Available Starting SY 2011*

This course provides planned learning activities designed to allow students to gain knowledge and skills in PC based inventory control, parts identification, and customer service. Learning activities in this course emphasize the development of more advanced knowledge and skills than those provided in Warehouse Operations I. Skills introduced in this course include data base operations, supply logistics, supplier relations, and shop operations.

### **20198A001 Parts and Warehousing Workplace Experience**

**CTE Course**

*Available Starting SY 2021*

Parts and Warehousing Workplace Experience courses provide students with work experience in fields related to distribution and logistics. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### **20998A001 Heavy Equipment Technician Workplace Experience**

**CTE Course**

*Available SY 2021 - 2021*

Heavy Equipment Technician Workplace Experience courses provide students with work experience in a field related to architecture or construction. Goals are typically set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses may include classroom activities as well, involving further study of the field or discussion regarding experiences that students encounter in the workplace.

### **20998A002 Transportation, Distribution & Logistics Workplace Experience**

**CTE Course**

*Available Starting SY 2022*

Transportation, Distribution & Logistics Workplace Experience courses provide work experience in fields related to the Transportation, Distribution & Logistics cluster. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

## 21 Engineering and Technology

### **21001A001 Principles of Technology I**

**CTE Course**

*Available Starting SY 2011*

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

### **21001A002 Principles of Technology II**

**CTE Course**

*Available Starting SY 2011*

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

### **21004A001 Principles of Engineering**

**CTE Course**

*Available Starting SY 2011*

Principles of Engineering courses provide students with an understanding of the engineering/technology field. Students typically explore how engineers use various technology systems and manufacturing processes to solve problems; they may also gain an appreciation of the social and political consequences of technological change.

### **21006A001 Introduction to Engineering Design**

**CTE Course**

*Available Starting SY 2011*

Engineering Design courses offer students experience in solving problems by applying a design development process. Often using solid modeling computer design software, students develop, analyze, and test product solutions models as well as communicate the features of those models.

### **21006A002 Engineering Design**

**CTE Course**

*Available Starting SY 2011*

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

## 21 Engineering and Technology

### **21007A002      Engineering Design & Development**

**CTE Course**

*Available SY 2011 - 2021*

Engineering Design and Development courses provide students with the opportunity to apply engineering research principles as they design and construct a solution to an engineering problem. Students typically develop and test solutions using computer simulations or models but eventually create a working prototype as part of the design solution.

### **21008A001      Digital Electronics**

**CTE Course**

*Available Starting SY 2011*

Digital Electronics courses teach students how to use applied logic in the development of electronic circuits and devices. Students may use computer simulation software to design and test digital circuitry prior to the actual construction of circuits and devices.

### **21009A001      Robotics**

**CTE Course**

*Available Starting SY 2012*

Robotics courses help students develop and expand their skills and knowledge of robotics and related scientific and engineering topics. Course topics may include principles of mechanics, electronics, hydraulics, pneumatics, programmable logic controllers. These courses may emphasize the use of engineering principles to design and build robots, construct and connect sensors, and program robots in the programming language.

### **21010A001      Computer Integrated Manufacturing**

**CTE Course**

*Available Starting SY 2011*

Computer Integrated Manufacturing courses involve the study of robotics and automation. Building on computer solid modeling skills, students may use computer numerical control (CNC) equipment to produce actual models of their three-dimensional designs. Course topics may also include fundamental concepts of robotics, automated manufacturing, and design analysis.

### **21012A001      Civil Engineering and Architecture**

**CTE Course**

*Available Starting SY 2011*

Civil Engineering and Architecture courses provide students with an overview of the fields of Civil Engineering and Architecture while emphasizing the interrelationship of both fields. Students typically use software to address real world problems and to communicate the solutions that they develop. Course topics typically include the roles of civil engineers and architects, project-planning, site-planning, building design, project documentation, and presentation.

## 21 Engineering and Technology

### **21013A001      Aerospace Engineering**

**CTE Course**

*Available Starting SY 2011*

Aerospace Engineering courses introduce students to the world of aeronautics, flight, and engineering. Topics covered in the course may include the history of flight, aerodynamics and aerodynamics testing, flight systems, astronautics, space life systems, aerospace materials, and systems engineering.

### **21014A001      Biotechnical Engineering**

**CTE Course**

*Available Starting SY 2011*

Biotechnical Engineering courses enable students to develop and expand their knowledge and skills in biology, physics, technology, and mathematics. Course content may vary widely, drawing upon diverse fields such as biomedical engineering, biomolecular genetics, bioprocess engineering, agricultural biology, or environmental engineering. Students may engage in problems related to biomechanics, cardiovascular engineering, genetic engineering, agricultural biotechnology, tissue engineering, biomedical devices, human interfaces, bioprocesses, forensics, and bioethics.

### **21048A001      Engineering Workplace Experience**

**CTE Course**

*Available Starting SY 2021*

Engineering Workplace Experience courses provide students with work experience in an engineering-related field. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### **21052A001      Foundations of Technology**

**CTE Course**

*Available Starting SY 2011*

The course employs teaching/learning strategies that enable students to build their own understanding of new ideas. It is designed to engage students in exploring and deepening their understanding of “big ideas” regarding technology and apply technological processes to solve real problems and develop knowledge and skills to design, modify, use and apply technology in the following areas: engineering design, manufacturing technologies, construction technologies, energy & power, information & communication technologies and emerging technologies.

## 21 Engineering and Technology

### **21052A002 Introduction to Technology and Engineering (Industrial) CTE Course**

*Available Starting SY 2011*

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

### **21053A001 Emerging Technologies CTE Course**

*Available Starting SY 2013*

Emerging Technologies courses emphasize students' exposure to and understanding of new and emerging technologies. The range of technological issues varies widely but typically include lasers, fiber optics, electronics, robotics, computer technologies (software engineering), Game Art and Design, CAD/CAM, communication modalities, and transportation technologies.

### **21054A001 Technological Design and Innovation CTE Course**

*Available Starting SY 2011*

In this course, technological design and innovation are presented through practical applications. Students apply technology, science, and mathematics concepts and skills to solve technological/engineering problems and innovative designs. Students research, develop, create simulations, test, and analyze engineering designs using criteria such as design effectiveness, public safety and human factors.

### **21054A002 Advanced Design Applications (EbD) CTE Course**

*Available SY 2011 - 2016*

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

## 21 Engineering and Technology

### **21054A003      Advanced Technological Applications (EbD)**

**CTE Course**

*Available SY 2011 - 2016*

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

### **21054A004      Technology, Society and Sustainability**

**CTE Course**

*Available Starting SY 2016*

Technology, Society and Sustainability course will provide an overview of the importance of, impact on, and relationships between technological endeavors and society at large. This courses typically emphasize environmental factors, economics impacts and the influences of society on technological/environmental endeavors.

### **21058A001      Geospatial Technology**

**CTE Course**

*Available Starting SY 2021*

Geospatial Technology courses provide students with experiences pertaining to the study of geographic information systems (GIS), global positioning systems (GPS), remote sensing (RS), digital image processing simulator (DIPS), Geodesy, automated cartography (Auto-Carto), land surveying (LS), and navigation. These courses may use spatial analysis models and guidelines for integrating, interpreting, analyzing, and synthesizing geographic data, with a focus on both the implications and limitations of such technologies. Other topics may include interfacing with telecommunications and automated database management systems.

## 21 Engineering and Technology

### **21060A001 Introduction to Wind Energy**

**CTE Course**

*Available Starting SY 2025*

Students will examine, operate, and evaluate a small wind-powered electrical generation system while exploring the wind energy industry and career opportunities. The course will include identification and analysis of the components and systems of a small wind turbine and how it applies to industrial wind turbines. Students will use standard hand tools and materials, learn the basics of electrical wiring and equipment, and learn best practices in safety. Students will learn how to calculate and use air flow and power measurement instruments. Small wind labs should be used to provide students with hands-on experience installing and troubleshooting small wind installations.

### **21061A001 Wind Turbine Mechanics and Service**

**CTE Course**

*Available Starting SY 2021*

Wind Turbine Mechanics and Service courses examine the skills and knowledge necessary to work as a technician in the wind industry. Subjects addressed include safety training, the identification and analysis of the components of a wind turbine, and the function and interrelation of the systems located in a wind power system. Students will develop a systems view of the propulsion and generation equipment typically located in a nacelle, gearboxes, and other mechanical systems that make up the subsystems of today's wind turbine. These courses will also enable students to study site preparation and construction, operation and maintenance programs, and data acquisition and assessment.

### **21098A001 Energy Systems Technology Workplace Experience**

**CTE Course**

*Available Starting SY 2021*

Energy Systems Technology Workplace Experience courses provide students with work experience in a field related to technological systems and structures. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

## 21 Engineering and Technology

### **21098A002 Energy Workplace Experience**

**CTE Course**

*Available Starting SY 2022*

Energy Workplace Experience courses provide work experience in fields related to the Energy cluster. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### **21098A003 Solar Energy Workplace Experience**

**CTE Course**

*Available Starting SY 2025*

Solar Energy Workplace Experience courses provide students with work experience in a field related to technological systems and structures in the solar industry. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week involving further study of the field, discussion of relevant topics that are responsive to the workplace experience, and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs, including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### **21098A004 Wind Energy Workplace Experience**

**CTE Course**

*Available Starting SY 2025*

Wind Energy Workplace Experience courses provide students with work experience in a field related to technological systems and structures in the wind industry. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week involving further study of the field, discussion of relevant topics that are responsive to the workplace experience, and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs, including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

## 21 Engineering and Technology

### **21102A001      Drafting**

**CTE Course**

*Available Starting SY 2011*

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

### **21102A002      Beginning Drafting**

**CTE Course**

*Available Starting SY 2012*

Beginning Drafting is an introductory level drafting course. During this course students will learn the basic fundamentals of drafting and/or computer aided drafting (CAD). The instruction will include the care and use of drafting equipment, freehand sketching, orthographic projection, lettering techniques, dimensioning standards, pictorial drawings, drawing reproduction, and an introduction to CAD.

### **21103A001      Architectural Drafting I**

**CTE Course**

*Available Starting SY 2011*

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

### **21103A002      Architectural Drafting II**

**CTE Course**

*Available Starting SY 2011*

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

## 21 Engineering and Technology

### **21106A001      Mechanical Drafting I**

**CTE Course**

*Available Starting SY 2011*

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

### **21106A002      Mechanical Drafting II**

**CTE Course**

*Available Starting SY 2011*

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

### **21108A001      Blueprint Reading**

**CTE Course**

*Available Starting SY 2021*

Blueprint Reading courses provide students with the knowledge and ability to interpret the lines, symbols, and conventions of drafted blueprints. They generally emphasize interpreting, not producing, blueprints, although the courses may provide both types of experiences. Blueprint Reading courses typically use examples from a wide variety of industrial and technological applications.

## 21 Engineering and Technology

### **21148A001 Drafting Workplace Experience**

**CTE Course**

*Available Starting SY 2021*

Drafting Workplace Experience courses provide work experience in a field related to drafting. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### **21998A001 Science, Technology, Engineering & Mathematics Workplace Experience**

**CTE Course**

*Available Starting SY 2022*

Science, Technology, Engineering & Mathematics Workplace Experience courses provide work experience in fields related to the Science, Technology, Engineering & Mathematics cluster. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Health Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

### **71001A001 Science of Technology (PLTW GTT)**

**CTE Course**

*Available SY 2012 - 2021*

Students trace how science has affected technology throughout history and learn about applied physics, chemical engineering and nanotechnology through exploratory activities and projects.

### **71001A002 Exploring Technology (EbD)**

**CTE Course**

*Available SY 2012 - 2021*

This course helps to develop an understanding of the progression and scope of technology through exploratory experiences. In group and individual activities, students experience ways in which technological knowledge and processes contribute to effective designs, abilities, and skills contribute to effective design and solutions to technological problems. Students participate in design activities to understand how criteria, constraints, and processes affect designs.

## 21 Engineering and Technology

### **71002A001      Automation and Robotics (PLTW GTT)      CTE Course**

*Available SY 2012 - 2021*

Students trace the history, development, and influence of automation and robotics. They learn about mechanical systems, energy transfer, machine automation and computer control systems. Students acquire knowledge and skills in problem solving, teamwork collaboration and innovation.

### **71002A002      Flight and Space (PLTW GTT)      CTE Course**

*Available SY 2012 - 2021*

Students study the history of aerospace through hands-on activities, research and a presentation in the form of an infomercial. Students explore the science behind aeronautics and use their knowledge to design, build and test a model glider. Simulation software is used to expose students to traveling and living in space.

### **71002A003      Magic of Electrons (PLTW GTT)      CTE Course**

*Available SY 2012 - 2021*

Through hands-on projects, students explore the science of electricity, the behavior and parts of atoms, circuit design and sensing devices. Students acquire knowledge and skills in basic circuitry design and explore the impact of electricity on their lives.

### **71004A002      Technological Systems (EbD)      CTE Course**

*Available SY 2012 - 2021*

This course is intended to teach students how technological systems work together to solve problems and capture opportunities. Students participate in engineering design activities to understand how criteria, constraints, and processes affect designs. This course will give students a general background on the different types of systems, but will concentrate more on the connections between these systems.

### **71004A003      Green Architecture (PLTW GTT)      CTE Course**

*Available SY 2014 - 2021*

In a world of increasing costs, from construction materials to energy use, it is important to expose the next generation of builders to the concept of “being green.” In the wake of a hurricane, tsunami, or forest fire, many affordable homes are needed quickly; students will learn how to provide necessary housing and repurpose otherwise unused building materials.

### **71006A001      Design and Modeling (PLTW GTT)      CTE Course**

*Available SY 2012 - 2021*

This unit uses solid modeling software (a sophisticated mathematical technique for representing solid objects) as part of the design process. Utilizing this design approach, students understand how design influences their lives. Students also learn sketching techniques and use descriptive geometry as a component of design, measurement and computer modeling. Students brainstorm, research, develop ideas, create models, test and evaluate design ideas and communicate solutions.

## 21 Engineering and Technology

**71006A002      Invention and Innovation (EbD)**

**CTE Course**

*Available SY 2012 - 2021*

This course provides students with opportunities to apply the design process in the invention or innovation of a new product, process, or system. It will help develop a student's understanding of the scope of technology and the nature of technological design and problem-solving processes. Students will be involved in activities and experiences where they learn about brainstorming, visualizing, modeling, constructing, testing, experimenting, and refining designs.

## 22 Miscellaneous

### **22004A001          Work Experience and Career Exploration Program          CTE Course**

*Available SY 2011 - 2018*

Dropout Prevention Program courses vary widely, but typically are targeted at students who have been identified as being at risk of dropping out of or failing in school. Course content may include study skills and individual tutorials; job preparation, readiness, application, or interview skills; communication skills; personal assessment and awareness activities; speaker presentations; and small group seminars.

### **22151A001          Career Exploration          CTE Course**

*Available Starting SY 2019*

Career Exploration courses help students identify and evaluate personal goals, priorities, aptitudes, and interests with the goal of helping them make informed decisions about their careers. These courses expose students to various sources of information on career and training options and may also assist them in developing job search and employability skills.

### **22151A003          Secondary Transitional Experience Program (CTE)          CTE Course**

*Available Starting SY 2023*

This course code should be used for students participating in a STEP program that are also participating in assigned Career and Technical Education (CTE) courses. If the STEP program is not connected to a CTE program, the code 22151A002 should be used instead. STEP is a program approved by ISBE and provided by the DHS Division of Rehabilitation Services (DHS/DRS) that helps schools provide mandated transition services. These courses provide a built-in linkage to DHS/DRS, an agency that can assist students with disabilities with their post-school employment and career development goals. The program provides work experiences that coincide with post-secondary employment goals that could include paid employment or internships. This allows students to gain school credit towards graduation, while gaining hands-on work experience, with as-needed support services. The program also promotes the provision of the following Pre-employment Transition Services (per WIOA - the Workforce Innovation and Improvement Act): a. Job Exploration Counseling, b. Workplace Readiness Training, c. Counseling on Post-Secondary Education, d. Instruction in Self-Advocacy, and e. Work-Based Learning Experiences. Participation in the Secondary Transitional Experience Program may include classroom activities as well, involving further study of the Pre-Employment Transition Services topics. Thus, STEP can be offered in combination with miscellaneous vocational courses such as: 22151A000 Career Exploration, and 22152A000 - Employability Skills.

## 22 Miscellaneous

### 22153A001 Cooperative Education

CTE Course

*Available SY 2011 - 2021*

Cooperative Education is a capstone course designed to assist students in the development of effective skills and attitudes through practical, advanced instruction in school and on the job through cooperative education. Students are released from school for their paid cooperative education work experience and participate in 200 minutes per week of related classroom instruction. Classroom instruction focuses on providing students with job survival skills and career exploration skills related to the job and improving students' abilities to interact positively with others. For skills related to the job, refer to the skill development course sequences, the task list or related occupational skill standards of the desired occupational program. The course content includes the following broad areas of emphasis: further career education opportunities, planning for the future, job-seeking skills, personal development, human relationships, legal protection and responsibilities, economics and the job, organizations, and job termination. A qualified career and technical education coordinator is responsible for supervision. Written training agreements and individual student training plans are developed and agreed upon by the employer, student and coordinator. The coordinator, student, and employer assume compliance with federal, state, and local laws and regulations.

### 22153A002 FCS Cooperative Education

CTE Course

*Available SY 2011 - 2021*

Family and Consumer Sciences Cooperative Education is designed for students interested in pursuing careers in occupations in the field family and consumer sciences. Classroom instruction focuses on providing students with workplace skills, post-secondary education opportunities related to the job/career pathway, developing and maintaining positive workplace relationships, planning for the future, legal protection and responsibility, professional organizations, and advancing skills related to the job. Classroom and worksite instruction is based on the duties of the FCS occupation. Students are released from school for their paid cooperative education work experience, participate in 200 minutes per week of related classroom instruction, and supervised on-the-by a qualified instructor ½ hour or more per week per student. A qualified, certified FCS instructor is responsible for supervision. Written training agreements and individual student training plans are developed and agreed upon by the employer, student and coordinator. The coordinator, student and employer assume compliance with federal, state and local laws and regulations.