Courses

Career and Technical Education

Accounting I
Recommended Prerequisites: Algebra I, Computer Applications
SDE Course Code: 5910 **MNPS Course Code: BUS7115**

Accounting I introduces concepts and principles based on a double-entry system of maintaining the electronic and manual financial records for a sole proprietorship, partnership and corporation. It includes analyzing business transactions, journalizing, posting, and preparing worksheets and financial statements.

Accounting II
Recommended Prerequisites: Accounting I and Computer Applications
SDE Course Code: 5911 **MNPS Course Code: BUS7125**

Accounting II is an advanced study of concepts, principles and techniques that build on the competencies acquired in Accounting I used in keeping the electronic and manual financial records of a sole proprietorship, partnership and corporation. Departmental, management, cost and not-for-profit accounting systems are explored.

Advanced Aerospace
SDE Course Code: 6023 **MNPS Course Code: Pending**

This course will be the capstone course for students studying aviation flight. The units of study include safety, aircraft systems, aerodynamic principles, flight environment, pilot communications, meteorological phenomena, aircraft performance charts, navigation flight resources and physiological aspect of flying. Students will be able to sit for the knowledge portion of the Private Pilot's test at the completion of this course as well as receive dual credit through MTSU.

Advanced Computer Applications
Recommended Prerequisites: Computer Applications
SDE Course Code: 5904 **MNPS Course Code: BUS3719**

This is a capstone course in which students will learn necessary skills in problem solving using current and emerging integrated technology to include a variety of input technologies in the production of professional quality business documents and presentations. The course focuses on student choice, accountability, and performance. Students increase their employability by working toward the attainment of high-level skills in the areas of integrated software applications, communication skills, ethical issues, human relations, leadership, self-management, and workplace management. Students may choose areas of specialization and achieve industry certification in areas such as word processing, spreadsheet applications, multimedia presentations, schedule and contact management, etc. This course may articulate to post-secondary education.

Advanced Design Applications
Recommended Prerequisites: Foundations of Technology, Technological Design, Algebra I, Geometry, Physical Science
SDE Course Code: 5920 **MNPS Course Code: TEE3838**

This course has been designed as an advanced study for students engaged in themed academies and general technology studies that lead to the capacity to understand how technology's development, control and use is based on design constraints, and human wants and needs. The structure of the course challenges students to use design processes so that they can think, plan, design and create solutions to engineering and technological problems. Students are actively involved in the organized and integrated application of technological resources, engineering concepts, and scientific procedures.

Advanced Drafting and Design
Recommended Prerequisites: Computer Aided Drafting I & II; Algebra I, Geometry, Math and Science requirements should be obtained according to graduation requirements during and prior to the conclusion of the credits. Concurrency is acceptable.
SDE Course Code: 5927 **MNPS Course Code: VOC8072**

Advanced Drafting & Design is a course in which students will learn to use a software program to create engineering drawings including architectural, civil or plan drawings, assembly drawings, welding and process drawings, cross sections, 3D representations, bills of materials and schedules. Emphasis is on drawings of increasing complexity.

Advertising & Public Relations
Recommended Prerequisites: Exploration of Organizational Leadership & Marketing; Marketing & Management I Principles
SDE Course Code: 5936 **MNPS Course Code: ME8190**

Advertising and Public Relations focuses on the concepts and strategies associated with promoting products, services, ideas, and/or images. This course teaches students to examine this field from the viewpoints of the creative staff, business person, and consumer.

Agriscience (HQ)
Recommended Prerequisites: None
SDE Course Code: 5957 **MNPS Course Code: AGR8776**

Agriscience is a laboratory science course that prepares students for biology, subsequent science courses and post-secondary pursuits. The content area covers ecology, biological processes, sexual and asexual reproduction and a study of the chemical and physical laws that govern life. This course helps students understand the important role science serves as the agricultural industry moves into the 21st century. HQ-satisfies one credit of life science.

Alternative Energy Production and Development (Whites Creek only)
Recommended Prerequisites: Agriscience (HQ)
SDE Course Code: 9351 **MNPS Course Code: AGR8140**

This course will be the capstone course for students studying alternative energy. Students will be able to actually produce biofuels and other forms of alternative fuels as well as study alternative energy to fuel our world.

Anatomy & Physiology
Recommended Prerequisites: None
SDE Course Code: 3251/5991 **MNPS Course Code: SCI6551/ HSE5509**

Health Science Education Anatomy and Physiology is a course in which students will examine human anatomy and physical functions. They will analyze descriptive results of abnormal physiology and evaluate clinical consequences. A workable knowledge of medical terminology will be demonstrated. HQ-satisfies one credit of science.

Animal Biotechnology
Recommended Prerequisites: Agriscience (HQ) and Biology
SDE Course Code: 5967 **MNPS Course Code: AGR5136**

This course involves the study of taxonomy, anatomy and physiology, body systems, reproduction, hormonal and immune systems, nutrition, heredity and genetics (molecular biology), health, agrimedicine, well-being, DNA and biotechnology, and emerging technologies associated with companion and production animals.

Animation Simulation and Motion Graphics (Hillwood only 2013-2014)
Recommended Prerequisites: None
SDE Course Code: 6044 **MNPS Course Code: VOC8477**

This course is a course that builds on foundational elements of visual communication learned in Digital Arts and Design classes. Course content is designed to develop a strong knowledge in animation and software applications, new media graphics and the latest visual communication technologies that are multi-faceted and essential to the industries. Focus will be on developing understandings of key concepts, processes and strategies that will result in realistic animated characters, digital effects, products and environments. Along with creative challenges students will leverage digital tools to gather, evaluate, and use information, encouraging higher order thinking that will translate

into focused and innovation animations. Students will explore career opportunities, develop leadership, teamwork, and creative skills that are requisite in many aspects of life and industry.

Aquaculture/Hydroponics
Recommended Prerequisites: Agriscience, Principles of Agricultural Sciences, or Principles of Horticultural Sciences
SDE Course Code: 5949 **MNPS Course Code: AGR5109**

The student will explore the fastest growing field in the agricultural industry. Producing food in a water environment to meet the needs of today's increasing population includes raising shrimp, tilapia and shellfish. The hydroponics area includes growing various fruits and vegetables without the use of soil. Students will learn how to address issues such as using less space for food production, water management, including testing for water quality, dissolved oxygen, PH and ammonia.

Audio Production I
Recommended Prerequisites: None
SDE Course Code: 6045 **MNPS Course Code: VOC9626**

Audio Production I is designed to give students the basic knowledge and technical skills needed to prepare them for post-secondary study or entry-level employment in the audio industry. The students will develop the technical skills necessary to operate the equipment to produce a finished audio product in both studio situations and live performance. Students will develop knowledge of the business of music which will include publishing and promotional issues. They will also study the language of music.

Audio Production II
Recommended Prerequisites: Audio Production I
SDE Course Code: 6047 **MNPS Course Code: VOC9627**

Audio Production II is designed to give students the advanced knowledge and technical skills needed to prepare them for post-secondary study or entry-level employment in the audio industry. Students will develop skills in which to conduct complete recording sessions, as well as building skills in mix-down, mastering, and other post production techniques.

Audio Production III
Recommended Prerequisites: Audio Production I and II
SDE Course Code: 6048 **MNPS Course Code: VOC9628**

Audio Production III is designed to give students the advanced knowledge and technical skills needed to prepare them for post-secondary study or entry-level employment in the audio industry. Students will develop skills in which to conduct complete recordings sessions, as well as building skills in mix-down, mastering, and other post production techniques.

Automotive: Brake
Recommended Prerequisites: Transportation Core, Algebra I, Physical Science (may be concurrent)
SDE Course Code: 6028 **MNPS Course Code: VO8109**

Automotive: Brake Systems course offers training in the diagnosis and repair of hydraulic, mechanical, and electrical systems used in standard and anti-lock brake systems. Course content includes diagnosis, repair, and/or service technology of hydraulic and anti-lock brake systems to original equipment manufacturer (OEM) specifications. Educational experiences simulate automotive service industry operations through training aids, laboratory facilities, and school-based learning opportunities. Course content prepares students for the Automotive Service Excellence (ASE) Brake system test, for entry-level placement in the workforce, and for entry into post-secondary education.

Automotive: Electrical/Electronics
Recommended Prerequisites: Transportation Core, Brakes, Suspension and Steering, Algebra I, Physical Science (may be concurrent)
SDE Course Code: 6029 **MNPS Course Code: VO8106**

Automotive: Electrical/Electronics is a course that prepares students for entry-level positions or advanced training in automotive electrical and electronics systems. Students apply principles of electronics to automotive technology and develop diagnostic skills. The course provides students the opportunity to acquire marketable skills by training in the use of digital and analog volt meters, ohm meters, and amp meters; as well as oscilloscopes, test lights, load testers

and specialized electrical test equipment. Education experiences simulate automotive service industry operations through the use of training aids and modules and school-based learning opportunities. Course content prepares students for the Automotive Service Excellence (ASE) Electrical and Electronics certification.

Automotive: Engine Performance
Recommended Prerequisites: Transportation Core, Brakes, Suspension and Steering, Algebra I, Physical Science (may be concurrent)
SDE Course Code: 6030 **MNPS Course Code: Pending**

Automotive: Engine Performance is a course that prepares students for entry-level positions or advanced training in engine performance. The course covers electronic ignition and distributor ignition systems, fuel management, exhaust emissions control, and computer input and output signals and will identify the different types of sensors used by automotive engine computers. Students will perform inspections, tests, and measurements for diagnosis and perform needed repairs. Education and experiences simulate automotive service industry operations through the use of training aids and modules and offer school-based learning opportunities. Course content prepares students for the Automotive Service Excellence (ASE) Brakes certification test, for entry-level placement in the workforce, and for entry into post-secondary education.

Automotive: Steering & Suspension
Recommended Prerequisites: Transportation Core
SDE Course Code: 6031 **MNPS Course Code: VO8107**

Automotive: Suspension and Steering is a course that prepares students for entry-level positions or advanced training in automotive suspension and steering systems. Course material covers the principles of automotive suspension/steering systems and four-wheel suspension alignment. Course content provides the student the opportunity to acquire marketable skills by training wheel alignment and the testing, diagnosis, and repair of steering and suspension systems. Lab facilities and experiences simulate automotive service industry operations through the use of training aids and modules and school-based learning opportunities. Course content prepares students for the Automotive Service Excellence (ASE) Suspension and Steering test.

Aviation Maintenance I
Recommended Prerequisites: Algebra I, Physical Science (may be concurrent)
SDE Course Code: 6060 **MNPS Course Code: VOC8401**

Aviation Maintenance I offers the first part of the general aviation maintenance content common to Airframe and Power Plant Maintenance Technology. The course prepares students for Aviation Maintenance II and subsequent gainful employment or further study leading to Federal Aviation Administration (FAA) certification in Airframe and/or Power Plant certification. Students are introduced to career opportunities and paths within the aviation maintenance industry. Course content includes math and basic physics as applied to aviation, basic aerodynamics, aircraft structures, sheet metal, aircraft wood and fabric, avionics, assembly and rigging rotary wing aircraft, aircraft inspections and all Federal Aviation Administration (FAA) Regulations that govern technicians. FAA Regulations require 380 contact hours in maintenance toward Airframe or Power Plant certification.

Aviation Maintenance II
Recommended Prerequisites: Aviation Maintenance I, Algebra I, Physical Science
SDE Course Code: 6061 **MNPS Course Code: VOC8501**

Aviation Maintenance II continues the general aviation maintenance content begun in Aviation Maintenance I. The course prepares students for gainful employment or further study leading to Federal Aviation Administration (FAA) certification in Airframe and/or Power Plant certification. Course content includes sheet metal, aircraft wood and fabric, avionics, assembly and rigging of rotary wing aircraft, aircraft inspections and a review of all Federal Aviation Administration (FAA) Regulations that govern technicians.

Banking and Finance
Recommended Prerequisites: Accounting I
SDE Course Code: 5899 **MNPS Course Code: BUS3756**

Banking and Finance is a course designed to challenge the student with real banking and financial situations through a partnership with a local financial institution that would bring resources of mentors, seminars, and hands-on experience with day-to-day operations. Completion of this course will provide students with a basis for secondary education in finance and special job skills in banking financial institutions. Ethical issues will be presented in the course.

Biotechnology I
SDE Course Code: 5930 **MNPS Course Code: Pending**

Biotechnology I is designed to give students a comprehensive introduction to the scientific thinking, concepts and laboratory research techniques currently used in the field of biotechnology. In this course, students attain knowledge about the field of biotechnology and deeper understanding of the biological concepts used. In addition, students further 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.

Biotechnology II
SDE Course Code: 5930 **MNPS Course Code: Pending**

Biotechnology II is designed to give students a comprehensive introduction to the scientific thinking, concepts and laboratory research techniques currently used in the field of biotechnology. In this course, students attain knowledge about the field of biotechnology and deeper understanding of the biological concepts used. In addition, students further 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.

Biotechnology III
SDE Course Code: 5930 **MNPS Course Code: Pending**

Biotechnology III is designed to give students a comprehensive introduction to the scientific thinking, concepts and laboratory research techniques currently used in the field of biotechnology. In this course, students attain knowledge about the field of biotechnology and deeper understanding of the biological concepts used. In addition, students further 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.

Broadcasting I
Recommended Prerequisites: None
SDE Course Code: 6049 **MNPS Course Code: VOC8178**

Broadcasting I is offered for students interested in either the Audio and Video Technologies sub-cluster or the Journalism and Broadcasting sub-cluster of the arts and communication cluster. The overlap in these industries is extensive as can be witnessed in television, film, music, radio, newspaper, Web-cast, and entertainment just to name a few. This course is the entry-level course to prepare students for the media industry. Course content provides a broad-based exposure to audio, video, and journalism and broadcasting within the media industry.

Broadcasting II
Recommended Prerequisities: Broadcasting I
SDE Course Code: 6050 **MNPS Course Code: VO8279**

Broadcasting II is offered in the audio and video technology sub-cluster to students who have completed Broadcasting I or obtained instructor's approval. Course content focuses on broadcast production technologies utilizing simulated and/or real-life projects. This course centers on production of various broadcasting products including, commercials, music, news, and interactive programming. The student will gain valuable insight into the many facets of broadcast production, including but not limited to concept creation, scripting, sound design, visual design, engineering, editing, budgeting, and producing, as well as exploring some of the latest advances in industry technology.

Broadcasting III
Recommended Prerequisites: Broadcasting I and II
SDE Course Code: 6083 **MNPS Course Code: VOC8180**

Broadcasting III is offered in the Journalism and Broadcasting sub-cluster to students who have completed Broadcasting I and Broadcasting II or obtained the instructor's approval. This course focuses on simulated real-life broadcast production and management. Projects center on in-house production of newscasts, special events, and original programming. The student will gain valuable insight into both audio and video sides of the broadcasting industry. Course content is composed of scripting, reporting, directing, editing, budgeting, and producing, as well as

cameras, lights, sound, and set design. This course will explore the latest digital technology and applications, research, and future trends in the broadcast industry. Upon completion of this course students will be prepared to pursue post-secondary education or enter the broadcasting industry in an entry level position. The educational laboratories will simulate broadcast facilities in the broadcast industry.

Business Management
Recommended Prerequisites: Exploration of Organizational Leadership & Marketing
SDE Course Code: 5889 **MNPS Course Code: BUS7512**

Students in Business Management will develop a foundation in the many activities, problems, and decisions that are intrinsic to the management of a successful business, as well as an appreciation for the importance of these responsibilities. Areas to be examined include business organization, ethical and legal responsibilities, communication, decision-making, personnel, safety, professional development and related careers. By gaining an understanding of these areas, students will be better prepared to enhance the business decisions of tomorrow.

Business Principles
Recommended Prerequisites: Keyboarding
SDE Course Code: 5905/3709 **MNPS Course Code: BUS7550/BUS7500**

Business Principles is a core course in which students are introduced to all aspects of business: the domestic and international economies, financial principles, management strategies, administrative and information systems, ethics, and organizational and professional leadership. Students will analyze the elements of the business environment and focus on attitudinal and problem-solving skills inherent to success.

Cabling & Internetworking
Recommended Prerequisites: Information Technology Foundations, Computer Systems, Networking
SDE Course Code: 6093 **MNPS Course Code: VOC8273**

Cabling & internetworking stresses the conceptual and practical skills necessary to design, manage, and diagnose network hardware and software. Course content, which is project-based , allows students to interconnect workstations, peripherals, terminals, servers, and other networking hardware devices creating a typical infrastructure where all components communicate using the same language or protocols. This course will help prepare students to design, build, and maintain computer networks. The networking sub-cluster will help prepare students for the CompTIA Network+ Examination (2009 objectives) and cover the Cisco Certified Networking Associates (CCNA) Essentials exam. Mastery of course competencies will prepare students for successful completion of the Network+ exam and promote fundamental skills for employment as a Network Administrator or Network Engineer.

Carpentry I
Recommended Prerequisites: Construction Core, Algebra I
SDE Course Code: 6035 **MNPS Course Code: VOC5731**

Carpentry I is a course that will introduce students to basic skills and knowledge related to residential and commercial carpentry. Topics covered include wood, metal, and concrete building materials; fasteners; hand and power tools; fabrication based on construction plans; and framing of platform and post-and-beam structures, in both wood and metal. This course gives students an introduction to the skill and knowledge base typically required for apprentice carpenters.

Carpentry II
Recommended Prerequisites: Construction Core, Carpentry I, Algebra I, Geometry, or Physical Science
SDE Course Code: 6036 **MNPS Course Code: VOC5732**

Carpentry II is a course in which students will extend their skills and knowledge related to residential and commercial carpentry. Topics covered include stairs, installation and trim of windows and doors, installation and repair of gypsum wallboard, advanced site layout, exterior finish work, thermal and moisture protection, and an introduction to welding. This course gives students a substantial skill and knowledge foundation typically required for apprentice carpenters.

Chemistry of Cosmetology
Recommended Prerequisites: Principles of Cosmetology and Design Principles of Cosmetology
SDE Course Code: 5984 **MNPS Course Code: VO8652**

Chemistry of Cosmetology is the advanced level of cosmetology and it prepares students to perform work-related services using chemicals in the cosmetology industry. Content provides students the opportunity to acquire foundation skills in both theory and practical applications. Laboratory facilities and experiences will be used to simulate cosmetology work experiences. Students completing this portion of the course of cosmetology will acquire the necessary hours to transfer to a post-secondary course of study to complete the hours needed to be eligible to take the Tennessee State Board of Cosmetology examination for the Tennessee Cosmetology License. Upon completion and acquisition of 300 hours, students are eligible to take the Tennessee State Board of Cosmetology Shampoo examination for a Tennessee Shampoo Technician License.

Child and Lifespan Development
Recommended Prerequisites: None
SDE Course Code: 6013 **MNPS Course Code: FCS5610**

Child and Lifespan Development prepares students to understand the physical, social, emotional, and intellectual growth and development throughout the lifespan. Experiences such as laboratory observations, job shadowing, service learning, and laboratory participation will enhance the learning process. Instructional content includes child development theories and research; prenatal development; infants and toddlers; preschool years; middle childhood adolescence; adulthood; geriatrics; death and dying; careers; and leadership, citizenship and teamwork.

Civil Engineering (PLTW)
SDE Course Code: 6056 **MNPS Course Code: VOC9113**

Students apply what they learn about various aspects of civil engineering and architecture to the design and development of a property. Working in teams, students explore hands-on activities and projects to learn the characteristics of civil engineering and architecture. In addition, students use 3D design software to help them design solutions to solve major course projects. Students learn about documenting their project, solving problems and communicating their solutions to their peers and members of the professional community of civil engineering and architecture. This course is designed for 11th- or 12th-grade students.

Clinical Internship
Recommended Prerequisites: See Description
SDE Course Code: 5993 **MNPS Course Code: HSE8953**

Students may choose to complete a clinical internship after completing Medical Therapeutics, Diagnostic Medicine, Health Informatics, Rehabilitative Careers, Nursing Education, or Emergency Medical Services. The internships are designed to be completed in a hospital, nursing home, rehab center, medical office, or other health care facility. Class size is limited to 15.

Collision Repair: Non-Structural
Recommended Prerequisites: Transportation Core, Algebra I, Physical Science, Principles of Welding (100 hours)(may be concurrent)
SDE Course Code: 6062 **MNPS Course Code: VO8602**

Collision Repair: Non-Structural is a course that prepares students to analyze non-structural collision damage to a vehicle, determine the extent of the damage and the direction of impact, initiate an appropriate repair plan, and correctly use equipment to fit metal to a specified dimension within tolerances. Course content includes metal finishing, body filling and glass panel replacements. The course prepares students for entry-level employment and advanced training in collision repair technology, and post-secondary education. Students completing the Collision Repair: Non-Structural are eligible to take the ASE written examination for Non-Structural Analysis and Damage Repair.

Collision Repair: Painting & Refinishing
Recommended Prerequisites: Transportation Core, Non-Structural, Structural, Algebra I, Physical Science (may be concurrent)
SDE Course Code: 6063 **MNPS Course Code: VO8502**

Collision Repair: Painting and Refinishing is a course that prepares students to use plastics and adhesives in the repair and refinish processes and to apply automotive paint to a vehicle. Students learn to diagnose automotive paint

finish problems and to perform the appropriate manufacturer required techniques and processes to refinish the affected area or the complete vehicle. Course content provides the student with training in mixing, matching, and applying paint and finish to vehicles. Course content includes the application of plastics and adhesives in the repair and refinish processes. The course prepares students for entry-level employment and advanced training in collision repair technology, and post-secondary education. Students completing the Collision Repair: Painting and Refinishing are eligible to take the ASE written examination for Painting and Refinishing.

Collision Repair: Structural
Recommended Prerequisites: Transportation Core, Algebra I, Physical Science, Principles of Welding (100 hours)(may be concurrent)
SDE Course Code: 6064 **MNPS Course Code: VO8402**

Collision Repair: Structural is a course that prepares students to analyze structural collision damage to a vehicle, determine the extent of the damage and direction of impact, initiate an appropriate repair plan, and correctly use equipment to fit metal to a specified dimension with tolerances. Course content includes repairs to vehicle frames and glass. The course prepares students for entry-level employment and advanced training in collision repair technology, and post-secondary education. Students completing the Collision Repair: Structural are eligible to take the ASE written examination for Structural Analysis and Damage Repair.

Computer Aided Drafting I
Recommended Prerequisites: Algebra I or Technical Algebra, basic experience with graphical computer interface. Math and science requirements should be obtained according to graduation requirements during and prior to the conclusion of the credits. Concurrency is acceptable.
SDE Course Code: 6037 **MNPS Course Code: VOC8070**

Computer Aided Drafting I is a course in which students learn the basic concepts of scale drawings and orthographic projections by making simple two- and three-dimensional drawings using manual drafting tools and computer aided drafting (CAD). Course content will enable students to make the transition into the use of CAD software by having them make increasingly sophisticated drawings. Student work in teams will culminate in a class project to create a complete set of construction and assembly drawings for a mechanical product.

Computer Aided Drafting II
Recommended Prerequisites: Computer Aided Drafting I; Algebra I; basic experience with graphical computer interface. Math and science requirements should be obtained according to graduation requirements during and prior to the conclusion of the credits. Concurrency is acceptable.
SDE Course Code: 6039 **MNPS Course Code: VOC8071**

Computer Aided Drafting II is a course in which students will learn advanced two-dimensional and basic three-dimensional concepts of scale drawings and orthographic projections using a software program. Course content will enable individual students to create increasingly sophisticated drawings using a software program and will culminate in the creation of a complete set of construction and/or assembly drawings for a mechanical project.

Computer Applications
Recommended Prerequisites: Keyboarding
SDE Course Code: 5891 **MNPS Course Code: BUS3718**

This course is designed to develop computer technology skills. Students will use a variety of computer software and hardware tools and features of an electronic information network. Students will explore the historical, social and ethical issues of using computer technology. The students will develop skills that will assist them with efficient production of word processing documents, spreadsheets, databases, and presentations.

Computer Integrated Manufacturing (PLTW)
SDE Course Code: 6055 **MNPS Course Code: VOC9133**

Students answer the questions: How are things made? What processes go into creating products? Is the process for making a water bottle the same as it is for a musical instrument? How do assembly lines work? How has automation changed the face of manufacturing? As students find the answers to these questions, they learn about the history of manufacturing, a sampling of manufacturing processes, robotics and automation. The course is built around several key concepts: computer modeling, Computer Numeric Control (CNC) equipment, Computer Aided Manufacturing

(CAM) software, robotics and flexible manufacturing systems. This course is designed for 10th-, 11th- or 12th-grade students.

Computer Programming I
Recommended Prerequisites: None
Suggested Prerequisites: Algebra I
SDE Course Code: 5906 **MNPS Course Code: BU8112**

This course is designed to develop object-oriented programming language skills using high level languages such as Java, C++, and BASIC. The student will utilize the commands, statements, and procedures of this language to write, run, debug, and edit computer programs. This first-level course leads to game programming.

Computer Programming II
Recommended Prerequisites: Computer Programming I
SDE Course Code: 5907 **MNPS Course Code: BU8212**

This course is designed to enhance skills developed in Computer Programming I in object-oriented programming language skills using high level languages such as Java, C++, and BASIC. The student will utilize the commands, statements, and procedures of this language to write, run, debug, and edit computer programs. This second-level course leads to Game Programming.

Computer Systems
Recommended Prerequisites: Information Technology Concepts and Algebra I
SDE Course Code: 6094 **MNPS Course Code: VO8272**

Computer Systems is designed to prepare students with work-related skills and for certification in the information technology industry. Content provides students the opportunity to acquire knowledge and skill in both theory and practical applications pertaining to troubleshooting, replacing, installing, and upgrading computers. Upon completion of the course students will possess a thorough knowledge of personal computer hardware. Procedures used in this course will evaluate students in theory and practical applications through written, hands-on and computer based virtual simulations. Successful mastery of the course content will prepare students to concentrate in computer support, which will prepare students with skills in PC repair, diagnostics, and installation to obtain the IT industry standard, CompTIA's A+ certification.

Concrete I
Recommended Prerequisites: Core Construction, Algebra I
SDE Course Code: 6040 **MNPS Course Code: VOC5737/VOC5720**

Concrete I is a course that will introduce students to basic skills and knowledge related to reinforced concrete construction in residential commercial structures. Topics covered include safe practices, drawing interpretation, composition of concrete, principles of reinforcement, form construction, load analysis, and placing, curing and testing concrete. This course gives students an introduction to the skill and knowledge base typically required for apprentice concrete artisans.

Concrete II
Recommended Prerequisites: Construction Core, Concrete I, Algebra I, Geometry, or Physical Science
SDE Course Code: 6041 **MNPS Course Code: VOC5738/VOC5721**

Concrete II is a course in which students will learn and practice intermediate skills related to reinforced concrete construction in residential and commercial structures. Topics covered include safe practices, advanced construction drawing interpretation and site layout, lightweight concrete, design of concrete mixes, and design of reinforced concrete members. This course gives students a substantial skill and knowledge foundation typically required for apprentice concrete artisans.

Construction Core
Recommended Prerequisites: None
SDE Course Code: 6073 **MNPS Course Code: VOC8714**

Construction Core is a course that will introduce students to basic skills and knowledge applicable to all construction trades. Topics covered include safety, construction drawings, site layout, hand and power tools, linear and angular measurements, and application of algebraic and geometric principles to construction problems.

Criminal Justice I
Recommended Prerequisites: None
SDE Course Code: 5987 **MNPS Course Code: VO5330**

Criminal Justice I is the first level of study of criminal justice careers. It will prepare students for work-related knowledge and skills for advancement into the second level of criminal justice careers. Course content focuses on areas comprised of the three components of the criminal justice system, the police, courts and corrections. The course is an overview of the legal justice system and builds a better understanding of the development of laws on state, federal, and international levels. New technology and career opportunities in criminal justice are an integral part of the course content.

Criminal Justice II
Recommended Prerequisites: Criminal Justice I
SDE Course Code: 5988 **MNPS Course Code: VO5331**

Criminal Justice II will offer an in-depth study of criminal justice careers in which current criminal justice career issues will be discussed and debated. Local, state, federal, and international laws will be analyzed. Subject matter will include a comparison of the criminal justice careers in the United States with other countries. Students will have opportunities to participate in mock trials and field trips with criminal justice careers emphasis. Course content will introduce new technology, effects of forensic analysis, and career opportunities. The course content will include information for planning, managing, and providing judicial, criminal justices.

Criminal Justice III Forensic Science Investigation
Recommended Prerequisites: Criminal Justice I and II
SDE Course Code: 5989 **MNPS Course Code: VO5332**

Criminal Justice III will provide students with an opportunity to explore the basic processes and principles of forensic science as it relates to criminal investigation. Students will learn the importance of the identification, collection, and processing of evidence and its contribution to the criminal investigation. Students will learn the legal responsibilities and challenges which the forensic investigator may encounter from initial response to the court room.

Culinary Arts I
Recommended Prerequisites: None
SDE Course Code: 5979 **MNPS Course Code: FCS8151/VOC8151**

Culinary Arts I is the first level of Culinary Arts and prepares students for gainful employment and/or entry into post-secondary education in the food production and service industry. Designed to introduce students to food preparation concepts, terminology and practices in the modern commercial kitchen, the content provides students the opportunity to acquire marketable skills by examining both the industry and its career opportunities and by developing food preparation and service and interpersonal skills. Fundamental techniques and skills are taught with an emphasis on safety, sanitation, and proper equipment operation and maintenance. Laboratory facilities and experiences, which simulate commercial food production and service operations, offer school-based learning opportunities.

Culinary Arts II
Recommended Prerequisites: Culinary Arts I
SDE Course Code: 5980 **MNPS Course Code: FCS8251/VOC8251**

Culinary Arts II is the second level of Culinary Arts and prepares students for gainful employment and/or entry into post-secondary education in the food production and service industry. Content provides students the opportunity to acquire marketable skills by demonstrating the principles of safety and sanitation, food preparation skills, and teamwork to manage an environment conducive to quality food production and service operations. Laboratory facilities and experiences, which simulate commercial food production and service operations, offer school-based and work-based learning opportunities.

Culinary Arts III
Recommended Prerequisites: Culinary Arts I and II
SDE Course Code: 5981 **MNPS Course Code: FCS8351/VOC8351**

The third level of Culinary Arts serves as a capstone course. It, too, prepares students for gainful employment and/or entry into post-secondary education in the food production and service industry. Content provides students the

opportunity to apply the marketable culinary arts skills they have acquired by assuming increasingly responsible positions including participation in a cooperative education experience.

Design Principles of Cosmetology
Recommended Prerequisites: Principles of Cosmetology
SDE Course Code: 5986 **MNPS Course Code: VO8552**

Design Principles of Cosmetology is the second level of cosmetology and prepares students for work-related skills and advancement into the Chemistry of Cosmetology course. Content provides students the opportunity to acquire knowledge and skills in both theory and practical application. Advanced knowledge and skills in hair design, nail artistry, and cosmetic applications will be enhanced in a laboratory setting, which duplicates cosmetology industry standards. Upon completion and acquisition of 300 hours, students are eligible to take the Tennessee Board of Cosmetology Shampoo examination for a Tennessee Shampoo Technician License.

Desktop Publishing
Recommended Prerequisites: Computer Applications
SDE Course Code: 5896 **MNPS Course Code: BUS7184**

The student will apply keying, formatting, typography, and layout and design skill in developing electronic publishing documents. The student will develop skills in electronic publishing design, layout, composition, and photo journalism. Content provides the opportunity to acquire marketable skills and to prepare for gainful employment and/or entry into post-secondary education in the graphic communications industry. Laboratory facilities and experiences simulate those found in the graphic communications industry.

Diagnostic Medicine
Recommended Prerequisites: Health Science Education
SDE Course Code: 5994 **MNPS Course Code: HSE8453**

Diagnostic medicine creates a picture of an individual's health status at a single point in time. This could include the following careers and career areas: audiologist, cardiology, imaging, medical laboratory, radiography, nuclear medicine, sterotactic radiosurgery, cytotechnology, clinical laboratory technician, pathologists, medical physician, histotechnologist.

Digital Arts & Design I
Recommended Prerequisites: None
SDE Course Code: 6084 **MNPS Course Code: VO8177**

Digital Arts and Design I is a course that provides a foundation in visual communication concepts and design strategies. Course content is designed to foster skills and understanding that are essential in modern digital graphics, motion graphics, publishing, Web, film/video, photography, and animation graphic industries. Focus will be on developing understanding of key design concepts and strategies, along with design challenges that translate into creative communication solutions which accurately and effectively reach targeted audiences. Along with study of design principles, conceptualization processes and techniques, students will explore various applications of design through extensive study of typography, style, composition, visual elements, color, creative technical software and various problem-solving tasks, that encourages higher order thinking. Exploration of career opportunities, development of leadership, teamwork, collaborative and technical skills requisite in many aspects of life and industry which are creative and multi-faceted will be developed.

Digital Arts & Design II
Recommended Prerequisites: Digital Arts & Design I
SDE Course Code: 6086 **MNPS Course Code: VO8277**

Digital Arts and Design II is a course that builds on the foundational core elements of visual communication concepts and design strategies, learned in Digital Arts and Design I. Course content is designed to reinforce skills and support understanding that are essential in modern digital graphics, motion graphics, publishing, Web, film/video, photography, and animation graphic industries. Focus will be on developing understanding of key design concepts and strategies, along with design challenges that translate into creative communication solutions which accurately and effectively communicate. Along with continued study of design principles, conceptualization processes and techniques, students will gain mastery of various applications of design through continued study of typography, style,

composition, visual elements, color, creative technical software and more focused problem-solving tasks, that encourages higher order thinking. Exploration of career opportunities, development of leadership, teamwork, collaborative and technical skills requisite in many aspects of life and industry which are creative and multi-faceted will be developed.

Digital Arts & Design III
Recommended Prerequisites: Digital Arts & Design I and II
SDE Course Code: 6087 **MNPS Course Code: VO8377**

Digital Arts and Design III, with the confluence of technologies, visual arts and creative practices has changed dramatically over the past several years. Increasingly, the design studio functions as a dynamic and vital space for learning, exploring, and innovation. Negotiating complex relationships, developing communication strategies that leverage new technologies and provide robust opportunities for the application of knowledge, skills, and critical thinking associated with an array of contemporary creative and studio practices is the new industry standard. Course content is selected to broaden the foundation of design concepts and understanding related to modern communication design. This course will foster advanced integrated skills that are essential in digital graphics, motion graphics, publishing, web, film/video, photography, and animation graphic industries. Students will be exposed to real world design challenges in a laboratory facility through projects that simulate industry objectives.

Digital Electronics (PLTW)
Recommended Prerequisites: Algebra I
SDE Course Code: 6053 **MNPS Course Code: VOC9123**

Digital Electronics is a course in which students will construct and test fundamental digital logic circuits such as gates, counters, oscillators, and switches. A/D and D/A convertors will be applied to signal processing. Microcontroller programs will be modified and microcontrollers applied to closed-circuit control systems. The course culminates in a group project to create a digital servo control loop. Emphasis is on hands-on activities, real-world equipment, and current technology.

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eBusiness Communication
Recommended Prerequisites: None
SDE Course Code: 5888 **MNPS Course Code: BUS7291**

eBusiness Communication is the study of oral, written, and electronic communications in a global society. Components of communication include the sender, the message, the receiver, the feedback, and the channel. The purposes of communication are to build goodwill, persuade, obtain or share information, and build self-esteem. The course will address the use of Internet developing concepts, particularly those related to Web browsers, navigators, search engines, on-line communication methods, home and Web site design concepts, transfer of data, downloading files, security procedures and Internet navigational tools. The student will choose and use appropriate tools when completing Internet applications using the Internet for research and validation of research data for written and oral business communications. Emphasis will be placed on electronic research, security issues, ethics, business report writing, business correspondence, enhancement of oral presentations with electronic media and communication applying current technology.

Electrical I
Recommended Prerequisites: Construction Core, Algebra I (may be concurrent)
SDE Course Code: 6074 **MNPS Course Code: VOC5733**

Electrical I will provide basic skills and knowledge related to residential and commercial electrical systems. Course content includes leadership development, safe practices, Ohm's law, installing conduit, conductors, residential and commercial electrical systems and services according to National Electrical code (NEC) and local codes. This course gives students an introduction to the skill and knowledge base typically required for apprentice electricians.

Electrical II
Recommended Prerequisites: Construction Core, Electrical I, Algebra I, Physical Science, Geometry
SDE Course Code: 6075 **MNPS Course Code: VOC5734**

Electrical II is a course in which students will learn and practice intermediate skills related to electrical systems, with emphasis on commercial systems. Topics covered include over current protection; sizing conductor; lighting system; three-phase motor; motor control circuit; sizing raceways, boxes, and fittings; and connecting distribution transformers, including a laboratory experience conducted in a shop environment that supports electrical assembly

projects by students. This course gives students a substantial skill and knowledge foundation typically required for apprentice electricians.

Emergency Medical Services
Recommended Prerequisites: Health Science Education
SDE Course Code: 5995 **MNPS Course Code: HSE8853**

Emergency Medical Service is designed for students interested in a career in pre-hospital or emergency patient care. Career options may include emergency room physician, emergency medical technician, paramedic, or emergency room nurse. If students plan to sit for First Responders Certification Test, class is limited to 12.

Energy & Power Distribution Technology (Maplewood Only)
SDE Course Code: 5744 **MNPS Course Code: AEP5744**

The course is designed to develop competencies in electric power transmission and distribution systems; electrical grounding practices; installation of fuses and circuit breakers; analyzing risks when working with electrical systems; and demonstrating teamwork, employability, entrepreneurship, leadership, and citizenship skills.

Energy Foundations (Maplewood Only)
SDE Course Code: 5744 **MNPS Course Code: AEP5743**

The course introduces students to the history of energy development, generation and distribution and the global impact of renewable and non-renewable resources. Students will develop an understanding of electrical systems and electric power generation, transmission, and distribution. They will analyze alternative energy sources and will apply math, science, technology, and communication skills to hands-on projects. This first-level course leads to Energy and Power Distribution Technology.

Engineering Design
Recommended Prerequisites: Algebra 2 or higher math, Foundation of Technology, Technological Design, Advanced Design Applications or Advanced Technological Applications
SDE Course Code: 5921 **MNPS Course Code: TEE3839**

In Engineering Design, engineering scope, content and professional practices are presented through practical application. Students in engineering teams apply technology, science, and mathematical concepts and skills to solve engineering design problems and project-based learning. Students research, develop, test, and analyze engineering designs using criteria such as design effectiveness, public safety, human factors, and ethics. This course will maintain a focus on how engineers apply their creativity, resourcefulness, mathematical, scientific, and technical knowledge and skills in the creation or refinement of technological products/systems. A key approach will be the employment of a sophisticated, sequential, and iterative design and development process to solve authentic engineering tasks/problems using project-based learning.

Engineering Design and Development (PLTW)
SDE Course Code: 6059 **MNPS Course Code: VOC9143**

Entrepreneurship
Recommended Prerequisites: Exploration of Organizational Leadership & Marketing; Marketing & Management I Principles
SDE Course Code: 5934 **MNPS Course Code: ME8172**

The Entrepreneurship course will provide the high school student with the opportunity to analyze and evaluate the various aspects of business ownership in today's marketplace. The student will also be involved in the actual process of developing a business plan, and the determining its opportunities for success. Throughout this course the student will relate the foundations of marketing and business management to real-life entrepreneurial endeavors. This course will satisfy the Economics credit.

Exploration of Organizational Leadership & Marketing
Recommended Prerequisites: None
SDE Course Code: 5941 **MNPS Course Code: VO8122**

This course is designed to introduce and provide an overview of marketing and organizational leadership, as well as employment opportunities available in these fields. Students will explore important marketing concepts, personality

traits, and communication skills. Students will also develop skills in teamwork, conflict resolution, and group problem solving techniques used in business.

Family & Parenting Education
Recommended Prerequisites: Child and Lifespan Development
SDE Course Code: 6004 **MNPS Course Code: FCS8683**

Family and Parenting Education focuses on the significance of the family as a basic unit of society and the impact of parenting roles and responsibilities on the well-being of individuals and society. Instructional content includes family, individuals and society. Instructional content includes family, individuals, and society; relationships; communication; multiple roles; parenting roles and responsibilities; careers; and leadership, citizenship, and teamwork. The integration of Family, Career and Community Leaders of America (FCCLA) provides student opportunities for leadership development, personal growth, and school/community involvement.

Financial Planning
Recommended Prerequisites: None
SDE Course Code: 5890 **MNPS Course Code: BUS7514**

Financial Planning is a course designed to develop skills in the use of financial principles in making business decisions. Students will research job qualifications and employment opportunities in finance. The course includes a study of the allocation of financial resources, the effects of finance and credit institutions on the business community and impact of financial decisions on the consumer market. Ethical issues will be presented in this course.

Foundations of Technology
Recommended Prerequisites: Algebra I or currently enrolled
SDE Course Code: 5917 **MNPS Course Code: TEE3835**

Foundations of Technology prepare students to understand and apply technological concepts and processes that are the cornerstone for the high school technology program. Group and individual activities engage students in crating ideas, developing innovations, and engineering practical solutions. Technology content, resources, and laboratory/classroom activities apply student applications to science, mathematics, and other school subjects in authentic situations. This course will focus on the three dimensions of technological literacy: knowledge, ways of thinking and acting, and capabilities, with the goal of students developing the characteristics of technologically literate citizens. It will employ teaching/earning 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 engineering and makes use of a variety of assessment instruments to reveal the extent of understanding.

Game Programming
Recommended Prerequisites: Computer Programming II, Geometry; concurrent with Physics
SDE Course Code: 5908 **MNPS Course Code: VO8102**

The Game Programming course is intended for students who have displayed a mastery of programming fundamentals such as HTML and Java. It is project-based where the student explores the entire game production process and gains experience working on a collaborative programming project. At the end of the course, each team of students should have participated in an entire game development cycle resulting in a complete, fully-functional game.

Greenhouse Management
Recommended Prerequisites: Principles of Horticultural Sciences, Agriscience or Principles of Agricultural Sciences
SDE Course Code: 5954 **MNPS Course Code: AGR8675**

Greenhouse Management sets a foundation for progress in the horticulture sub-cluster area. As populations continue to expand, the importance of food production in a condensed, climate-controlled environment increases. Understanding the integrated principles needed for the successful management of a greenhouse will allow the agricultural industry to continue to produce the quality and quantity of food and fiber needed in the 21st century.

Health Informatics (Health Information Technology)
Recommend Prerequisites: Health Science Education
SDE Course Code: 5997 **MNPS Course Code: HSE8653**

This course will provide knowledge of ways to document an individua'sl care in the home, hospital, long term care, outpatient, and others. Careers could include medical records, health management, risk management, unit coordinator, computer operator, social worker, patient advocate, hospital chaplain, clinical department director, community services specialist, computer security specialist, data analyst, epidemiologist, health writer, medical librarian, medical video produce, and others.

Health Science Education
Recommended Prerequisites: None
SDE Course Code: 5998 **MNPS Course Code: HSE8153**

This course is an introduction to broad standards that serve as a foundation for Health Care Occupations and functions across health services. Units included are academics in health care communications systems, legal responsibilities, ethics, teamwork, and safety practices.

Healthcare Administration
SDE Course Code: 5913 **MNPS Course Code: Pending**

This is the first level course designed to introduce the students to the business and administrative areas of healthcare. It provides an overview of healthcare and patient accounting terminology, the healthcare delivery system, general accounting and patient accounting.

Hospitality Management
Recommended Prerequisites: Marketing and Management I Principles
SDE Course Code: 5940 **MNPS Course Code: ME8188**

The changing hospitality industry encompasses growing and varied employment and career advancement opportunities. This course prepares students for gainful employment and/or post-secondary training in the hospitality industry. Content provides students the opportunity to acquire marketable skills by examining the industry, exploring career opportunities and developing the interpersonal and technical skills.

Information Technology Foundations
Recommended Prerequisites: None
SDE Course Code: 6095 **MNPS Course Code: VOC8271/VO8170**

Information Technology Foundations is designed to prepare students with work-related skills for advancement in the telecommunication and information technology career paths. Content provides students the opportunity to acquire basic foundational knowledge and skills in both theory and practical applications in direct current, alternating current, and power supply circuits. Course content includes fundamentals of networking concepts for personal computers (PC), determining system requirements, setting up equipment, and performing installation tests for the end user. Content provides the opportunity to evaluate and install peripheral devices and become familiar with operating systems. Course content provides students the opportunity to acquire basic fundamental skills in both theory and practical applications of language, structure, and typography. Standards 11 through 13 stress layout and design guidelines as applied in the design of markup language documents. Course content will be delivered through virtual training and hands-on methods. Competencies mastered during this course help prepare students toward acquiring A+ and/or Net+ certification and/or Web design employment.

Interactive Multimedia Presentation
Recommended Prerequisites: None
SDE Course Code: 5897 **MNPS Course Code: BUS7617**

The student will apply keying, typography, layout and design skills in this course. The student will be proficient in using interactive multimedia tools to develop electronic presentations. Creative design, persuasive communications, and language arts skills are applied through research, evaluation, validation, written, and oral communication. Typography, layout and design guidelines are applied. Copyright laws and ethical practices are reinforced in creating and formatting various presentations that require imported data/graphics, digital, audio, and video clips. Team development will also be stressed as students work on multimedia projects. Laboratory facilities and experiences simulate those found in business and industry.

International Business and Marketing
Recommended Prerequisites: Business Principles, Business Economics, American Business Legal Systems, Marketing, or Virtual Enterprise International
SDE Course Code: 5935 **MNPS Course Code: VO8142**

International Business and Marketing is designed to provide students the opportunity to develop skills needed to live and work in a global marketplace. The student will acquire the attitudes, knowledge, and skills for entry-level international business and marketing occupations. This will include, but is not limited to, political, legal, financial, economic' ethical, and social/cultural considerations.

Introduction to Aerospace
Recommended Prerequisites: None
SDE Course Code: 6068 **MNPS Course Code: VOC8601**

Introduction to Aerospace is a course that introduces students to the knowledge and procedures required for the ground school (knowledge) portion of the Federal Aviation Administration (FAA) private pilot license examination. Students explore the history of aviation, career opportunities and paths within aviation, and the regulations governing those careers. The course also introduces principles of aeronautical decision-making, airplane systems, and aerodynamics while preparing student for the course in Flight Theory. Course content prepares students for post-secondary education and advancement in the aerospace industry.

Introduction to Engineering (PLTW)
SDE Course Code: 6054 **MNPS Course Code: VOC9103**

Designed for 9th or 10th grade students, the major focus of the IED course is to expose students to the design process, research and analysis, teamwork, communication methods, global and human impacts, engineering standards and technical documentation. Students use 3D solid modeling design software to help them design solutions to solve proposed problems and learn how to document their work and communicate solutions to peers and members of the professional community.

Life Connections
Recommended Prerequisites: None
SDE Course Code: 6011 **MNPS Course Code: FCS5623**

Life Connections is a course designed to assist students in making a successful transition from high school into the post high school environment. Students will be empowered to take action for the well-being of themselves and others as they effectively manage the roles and responsibilities created by family, career, and community interactions. The role of communication in establishing and maintaining healthy interpersonal relationships is emphasized. Skills related to decision making, problem solving, critical and creative thinking, technology, and workplace readiness practiced in Life Connections will provide students with an understanding of how to plan for and manage careers in an ever-changing workplace.

Maintenance and Light Repair I
Recommended Prerequisites: None
SDE Course Code: 5879 **MNPS Course Code: VOC8102**

The Maintenance and Light Repair I (LMR I) course prepares students for entry into Maintenance and Light Repair II. Students explore career opportunities and requirements of a professional service technician. Content emphasizes beginning transportation service skills and workplace success skills. Students study safety, tools, equipment, shop operations, basic engine fundamentals, and basic technician skills. Upon completing all of the Maintenance and Light Repair courses, students may enter automotive service industry as an ASE Certified MLR Technician.

Maintenance and Light Repair II
Recommended Prerequisites: Maintenance and Light Repair I
SDE Course Code: 5880 **MNPS Course Code: VOC8202**

The Maintenance and Light Repair II (MLR II) course prepares students for entry into Maintenance and Light Repair III. Students study automotive general electrical systems, starting and charging systems, batteries, lighting, and electrical accessories. Upon completing all of the Maintenance and Light Repair courses, students may enter automotive service industry as an ASE Certified MLR Technician.

Maintenance and Light Repair III
Recommended Prerequisites: Maintenance and Light Repair I and II
SDE Course Code: 5881 **MNPS Course Code: VOC8302**

The Maintenance and Light Repair III (MLR III) course prepares students for entry into Maintenance and Light Repair IV. Students study and service suspension and steering systems and brake systems. Upon completing all of the Maintenance and Light Repair courses, students may enter automotive service industry as an ASE Certified MLR Technician.

Maintenance and Light Repair IV
Recommended Prerequisites: Maintenance and Light Repair I, II, and III
SDE Course Code: 5882 **MNPS Course Code: Pending**

The Maintenance and Light Repair IV (MLR IV) course prepares students for entry into the automotive workforce or into post-secondary training. Students study and service automotive HVAC systems, engine performance systems, automatic and manual transmission/transaxle systems, and practice workplace soft skills. Upon completing all of the Maintenance and Light Repair courses, students may enter automotive service industry as an ASE Certified MLR Technician.

Market Research & Analysis
Recommended Preerquisite: Marketing and Management I Principles
SDE Course Code: 5937 **MNPS Course Code: ME8191**

Marketing Research and Analysis is a course of study that focuses on the system (planning, collecting, processing information, and implementing information) for conducting research to determine marketing strategies. The course is targeted at students who need a basic understanding of research procedures, data interpretations, and communication of findings.

Marketing and Management I Principles
Recommended Prerequisites: None
SDE Course Code: 5931 **MNPS Course Code: ME8169**

Marketing and Management I Principles focuses on the study of marketing concepts and their practical application. Students will examine risks and challenges marketers face to establish a competitive edge. Subject matter includes economics, marketing foundations/functions, and human resource and leadership development. Skills in communication, mathematics, economics and psychology are reinforced in this course. HQ – satisfies one-half credit in Economics.

Media Publishing I
SDE Course Code: 6042 **MNPS Course Code: Pending**

The primary goal of Media Publishing I is for students to improve oral and written communication skills to be used in a Media Publishing environment. Students study how all aspects of the entertainment industry integrate in order to deliver new products to the public and how creative efforts and works are produced, funded, marketed, and distributed for financial profit. They will learn the history of the modern commercial entertainment industry through technology, social change, and law.

Media Publishing II
SDE Course Code: Pending **MNPS Course Code: Pending**

To be determined summer 2014.

Medical Terminology
Recommended Prerequisites: Health Science Education
SDE Course Code: 5883 **MNPS Course Code: HSE8690**

Medical terminology is designed to develop a working knowledge of the language of health professions. Students acquire word-building skills by learning prefixes, suffixed, roots, combining forms, and abbreviations. Utilizing a body systems approach, students will define, interpret , and pronounce medical terms relating to structure and function, pathology, diagnosis, clinical procedures, and pharmacology. Students will use problem-solving techniques to assist

in developing an understanding of course concepts. This course is a fundamental course for students who are pursuing a career in the health care profession. It is the basic language required for all areas of health science and is required for any health care profession beginning with entry level staff.

Medical Therapeutics
Recommended Prerequisites: Health Science Education
SDE Course Code: 5999 **MNPS Course Code: HSE8253**

This course provides knowledge and skills to maintain or change to the health status of an individual over time. This could include careers such as dental, dietetics, medical assistance, home health, nursing, pharmacy, respiratory, social work, nutritionist, physician, psychiatrist, psychologist, veterinarian, gerontology service provider, medical practice owner, attorney for health care, and others.

Music Industry Survey
SDE Course Code: 6042 **MNPS Course Code: VOC8200**

Music Industry Survey is designed to give students a broad base of knowledge, including technical skills, vocabulary, practices, and the legal and commercial structure of the entertainment business needed to prepare them for more in-depth instruction in the Recording Industry and Media Publishing Pathways, for post-secondary study, or entry level employment in the entertainment industry. Students study how all aspects of the entertainment industry integrate in order to deliver new products to the public and how creative efforts and works are produced, funded, marketed, and distributed for financial profit. They will learn the history of the modern commercial entertainment industry through technology, social change, and law. Students will explore contemporary issues facing the industry and apply concepts to new model solutions.

Networking
Recommended Prerequisites: Information Technology Concepts, Computer Systems
SDE Course Code: 6097 **MNPS Course Code: VOC8172**

Networking stresses the conceptual and practical skills necessary to design, manage, and diagnose network hardware and software. Course content, which is of the project-based format, allows students to interconnect workstations, peripherals, terminals, servers, and other networking hardware devices creating a typical infrastructure where all components communicate using the same language or protocols. This course will help prepare students to design, build, and maintain computer networks. The networking sub-cluster will help prepare students for the CompTIA Network + examination (2009 objectives) and cover the Cisco Certified Networking Associates (CCNA) Essentials exam. Mastery of course competencies will prepare students for successful completion of the Network + exam and promote fundamental skills for employment as a Network Administrator or Network Engineer.

Nursing Education
Recommended Prerequisites: Health Science Education
SDE Course Code: 6000 **MNPS Course Code: HSE8353**

This course consists of 18 units of study dealing with direct bedside nursing care. Clinical experience will consist of supervised practice in the nursing home as well as demonstrations in the classroom. Students can be registered by the Tennessee Department of Health after the completion of the course; 100 hours clinical and theory, passing a state test (both written and skills); and will be job ready. Students may complete a clinical internship following this course. Jobs include registered nurse, clinical nurse, specialist, nurse practitioner, nurse midwife, nurse anesthetist, forensic nurse and others. Class size is limited to 15.

Plant Biotechnology
Recommended Prerequisites: Agriscience (HQ) and Biology
SDE Course Code: 5960 **MNPS Course Code: AGR8120**

This course is to prepare students with interests in higher-level, science-based plant agriculture. Students enrolled in this course will study rigorous standards related to the principles of plant growth, cell structure and functions, heredity and genetics (molecular biology), plant breeding and improvement, hormones and growth regulators, chemical nature of plant life, flower structure and function, seed formation and germination, DNA and biotechnology, and emerging technologies. Students will use scientific investigation to determine a plant problem. FFA and supervised experience will be included as appropriate.

Principles of Cosmetology
Recommended Prerequisites: None
SDE Course Code: 5983 **MNPS Course Code: VO8452**

Principles of Cosmetology is the first level of cosmetology, and it prepares students with work-related skills for advancement into the Design Principles of Cosmetology course. Content provides students the opportunity to acquire basic fundamental skills in both theory and practical applications of leadership and interpersonal skill development. Content stresses safety, environmental issues, and protection of the public and designers as integrated with the principles of hair design, nail structure, and cosmetic procedures. Laboratory facilities and experiences simulate those found in the cosmetology industry.

Principles of Engineering (PLTW)
Recommended Prerequisites: Computer Aided Drafting, Algebra I, Geometry, Algebra II
SDE Course Code: 6052 **MNPS Course Code: VOC9203**

Principles of Engineering is a course in which students explore the nature of engineering and the skills fundamental to all engineering fields, as well as the role of quality assurance and quality control procedures in manufacturing. Emphasis is placed on actual projects and presentations and the use of modern tools (e.g., CAD). The course can be enhanced by cooperation with local manufacturing facilities, which can provide real measurement data and opportunities for on-site visits to witness engineering tasks and projects, and quality control data collection.

Programming & Logic I
Recommended Prerequisites: Algebra I
SDE Course Code: 6098 **MNPS Course Code: VOC8183/VO8183**

Programming and Logic is a course in which students will develop skills in problem analysis, construction of algorithms, and computer implementation of algorithms as they work on programming projects of increasing complexity. The recommended programming environment is *DrScheme*, as it permits an emphasis on development of analytic skills rather than any particular language syntax or vocabulary. Emphasis is on actual programming projects, both individual and group. Course content should be repeatedly applied to increasingly complex projects.

Programming & Logic II
Recommended Prerequisites: Programming and Logic I, Algebra I
SDE Course Code: 6099 **MNPS Course Code: Pending**

Programming & Logic II is a course in which students will develop advanced skills in problem analysis, construction of algorithms, and computer implementation of algorithms as they work on programming projects of increasing complexity. The recommended programming environment is *Visual Studio*; it permits an emphasis on development of analytic skills using a particular language syntax or vocabulary. Emphasis is on actual programming projects, both individual and group. Course content should be repeatedly applied to increasingly complex projects. Advanced topics using DirectX, AI, C#, and Java are planned.

Recording Industry I
SDE Course Code: 6042 **MNPS Course Code: Pending**

This course takes the technical skills, vocabulary, and practices of the recording industry, including the legal and commercial structure of the entertainment business learned in the survey, and puts them into practice. Students work in a real-world environment in order to deliver new creative products to the public and are integral in the production, funding, marketing and distribution of creative works. They will take their knowledge of the history of the modern commercial entertainment industry; from technology, social change, and law and examine contemporary issues facing the industry and apply these concepts to new model solutions. These skills will allow students to enter post-secondary study at an advanced level, or as entry level employees in the entertainment industry.

Recording Industry II
SDE Course Code: Pending **MNPS Course Code: Pending**

To be determined summer 2014.

Rehabilitation Careers
Recommended Prerequisites: Health Science Education
SDE Course Code: 5990 **MNPS Course Code: HSE8753**

This course will focus on enabling the person to live to the fullest capacity possible. Units will include sports medicine, physical therapy, occupational therapy, speech/language therapy, art, music and dance therapy, and others.

Retail Operations
Recommended Prerequisites: Exploration of Organizational Leadership & Marketing
SDE Course Code: 5938 **MNPS Course Code: ME8186**

This course offers a comprehensive view of retail from general information about retailers, consumers and buying behavior to specific management, buying, systems and retail strategy. This course will satisfy the Economics credit.

Small Animal Care
Recommended Prerequisites: Agriscience (HQ)
SDE Course Code: 5958 **MNPS Course Code: AGR8375**

Small Animal Care contains objectives to prepare students for careers in managing and caring for specialty and companion animals. As our population raises more specialty and companion animals for production purposes and personal value, careers that work with these animals in a safe environment will continue to expand.

Sports & Entertainment Marketing
Recommended Prerequisites: Marketing and Management I Principles
SDE Course Code: 5939 **MNPS Course Code: ME8184**

Sports and Entertainment is a specialized course designed to offer students an opportunity to gain knowledge and develop skills related to the growing sports and entertainment industry. Students will develop skills in the areas of facility design, merchandising, advertising, public relations/publicity, event marketing, sponsoring, ticket distribution, and career opportunities as they relate to the sports and entertainment industry.

Teaching as a Profession I
Recommended Prerequisites: Child and Lifespan Development and Life Connections
SDE Course Code: 6010 **MNPS Course Code: FCS5622**

Teaching as a Profession is a course designed to capture the interest of secondary students as potential teachers, introduce students to teaching as a profession, and foster respect for the teaching profession. Students will gain knowledge and skills that will establish a foundation for a successful pathway to a teaching career. Content standards guide students to discover challenges, opportunities, and rewards of a teaching career. Content includes history and current issues of education; teacher roles, responsibilities, and characteristics; self-exploration and understanding; the teacher and learning processes; human growth and development; teaching career opportunities and preparation; and components of instruction. Students will learn through classroom observations and experiences, student organization activities, and the development of a professional portfolio.

Teaching as a Profession II (Antioch and Whites Creek only)
SDE Course Code: 6021 **MNPS Course Code: FCS5690**

The course is directly aligned with the post-secondary course Intro to Special Education. Students will learn all aspects of working with special needs students and all legislation required.

Technological Design
Recommended Prerequisites: None
SDE Course Code: 5885 **MNPS Course Code: VOC8152**

In Technological Design, engineering scope, content, and professional practices are presented through practical applications. Students in engineering teams apply technology, science, and mathematics concepts and skills to solve engineering design problems and innovate designs. Students research, develop, test, and analyze engineering designs using criteria such as design effectiveness, public safety, human factors, and ethics. This course is an essential experience for students who are interested in technology, innovation, design, and engineering.

Theory of Flight
Recommended Prerequisites: Introduction to Aerospace
SDE Course Code: 6070 **MNPS Course Code: VOC8701**

Theory of Flight is a course that continues and completes the presentation of knowledge and procedures required for the ground school (knowledge) portion of the Federal Aviation Administration (FAA) private pilot license, begun in Introduction to Aerospace. Students will explore the flight environment and weather formation and assess how weather data and other factors impact safety and flight operations. The course also covers Federal Aviation Administration (FAA) regulations affecting private pilot operations; predicting aircraft performance, weight, and balance; types of navigation in pilotage and dead reckoning; aviation physiology and aeronautical decision-making; and cross county flying.

Therapeutic Exercise
SDE Course Code: 6001 **MNPS Course Code: Pending**

This course will describe and discuss a collection of materials, skills and values that a rehabilitation professional must possess to plan, implement, document, and evaluate the efficacy of therapeutic exercise programs for the rehabilitation and reconditioning of the injuries and illnesses of athletes and others involved in physical activities.

Transportation Core
Recommended Prerequisites: None
SDE Course Code: 6071 **MNPS Course Code: VO8165**

The Transportation Core course prepares students for entry into all subsequent transportation courses. Students explore career opportunities and requirements of a professional service technician. Content emphasizes beginning transportation service skills and workplace success skills. Students study safety, tools, equipment, shop operations, basic engine fundamentals, and basic technician skills. Upon completing this course students may enter automotive service technology, diesel equipment maintenance technology, 2 & 4 engine service technology, collision repair and refinish technology, or aviation maintenance.

Travel and Tourism
Recommended Prerequisite: Marketing and Management I Principles
SDE Course Code: 5933 **MNPS Course Code: ME8271**

Travel and Tourism is a growing industry encompassing a variety of businesses and employment opportunities. This course prepares students for gainful employment and/or post-secondary training in the industry of travel and tourism. Content provides students the opportunity to acquire marketable skills by examining both the industry and its career opportunities and by developing the human relations, communications and technical skills needed for advancement.

Veterinary Science
Recommended Prerequisites: Agriscience (HQ) and Small Animal Care or Animal Biotechnology
SDE Course Code: 5961 **MNPS Course Code: AGR8374**

Veterinary Science challenges students to use advanced technologies and medical treatments to maintain the health of animals. The animal health industry continues to grow in importance and prominence as more people purchase animals for pleasure and sustenance.

Virtual Enterprise
Recommended Prerequisite: Business Management or Marketing I
SDE Course Code: 5900 **MNPS Course Code: BUS3762**

Virtual Enterprise (VE) is a simulated business environment. The VE students will be involved in actual on the job work experiences, including accounting, personnel administration, management and marketing. The only difference between the VE and an actual business is that no material goods are produced or legal tender exchanged. However, services will be provided. Working in a team, the student will develop and enhance oral and written communication skills through initiative, responsibility, and creativity. The VE experience will weave together several academic disciplines and occupational subjects, thereby overcoming fragmentation of subjects. The course will link learning to application and real-life experiences. The goal is to create a learning environment that, through a series of activities, integrates school and workplace to enhance learning. Laboratory facilities and experiences simulate those found in business and industry. HQ – satisfies one-half credit in Economics

Web Design Applications
Recommended Prerequisite: Web Design Essentials
SDE Course Code: 5903 **MNPS Course Code: BUS3769**

This course, which is a project based continuation of Web Design Essentials, teaches students work-related skills for advancement into post-secondary education and/or the workplace. The course will provide the concepts and applications that may lead to business industry certification. Course content includes exposure to advanced Web design, graphics, animations, and the complex site design. The course content provides students the opportunity to acquire advanced skills in both theory and practical application of Web design and of leadership and interpersonal skill development.

Web Design Essentials
Recommended Prerequisites: Keyboarding, Computer Applications
Suggested Prerequisite or Concurrent with: Intractive Multimedia Presnetation, eBussiness Communication Systems
SDE Course Code: 5902 **MNPS Course Code: BUS3768**

This course, which is designed as the first level of Web Design, will teach students work-place and leadership skills for advancement into the Web Design Applications course. Keying and layout and design skills are essential. Students will develop Internet research techniques for business; acquire navigation mapping skills; effectively use a Web site; study fundamental concepts of digital commerce transaction security; examine related social, legal and ethical issues; study electronic financial management practices; and integrate the elements of Web Design. Web Design Essentials focuses on the language, structure, and essential concepts and principles of page layout and design and the ethics related to the production of Internet presentations. Typography, layout, and design guidelines will be applied in the design of Web pages. Upon completion of the course, a student will be able to evaluate, implement and apply the use of technology in Digital Commerce and Web Page Design for business.

Wholesale Logistics
SDE Course Code: 5942 **MNPS Course Code: Pending**

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