

Career & Technical Education Industrial Technology

A minimum of 1.0 VOC credit is required.

Not all students plan to go to a four-year college, but most jobs require some training after high school. The CTE department offers Montana Career Pathways which develop the skills and knowledge required for a specific career. Careers like Construction, Welding, Automotive, Drafting, Computer Programming, Graphic Design, Marketing, Hospitality Services, Entrepreneurship, and Business are covered under these pathways. At the high school level, students will gain the basic skills and knowledge related to a career choice. Counselors are ready to help students develop a four-year plan of study and placement after high school.

HHS INDUSTRIAL TECHNOLOGY COURSES RECOMMENDED SEQUENCE OF COURSES

	Welding	Drafting	Carpentry/Building Trades	Auto
Grade 9	Welding 1	Fundamental Drafting	Fundamental Woodworking & Design	
Grade 10	Welding 1 Welding 2	Fundamental Drafting Computer Aid Drafting	Fundamental Woodworking & Design Intermediate Carpentry & Cabinet Making	Auto Tech 1
Grade 11	Welding 1 Welding 2 Welding 3 Welding/Manufacturing Work Co-Op	Fundamental Drafting Computer Aid Drafting 3D Printing & Mechanical Design	Fundamental Woodworking & Design Intermediate Carpentry & Cabinet Making Advanced Carpentry & Cabinet Making	Auto Tech 1 Auto Tech 2
Grade 12	Welding 1 Welding 2 Welding 3 Welding 4 Welding/Manufacturing Work Co-Op	Fundamental Drafting Computer Aid Drafting 3D Printing & Mechanical Design Architectural House Design	Fundamental Woodworking & Design Intermediate Carpentry & Cabinet Making Advanced Carpentry & Cabinet Making	Auto Tech 1 Auto Tech 2 Auto Tech 3

7141 Fundamental Drafting (Year 1) Dual Credit – 3 credits

**Elective Grades: 9 – 12
Full Year – 1 Credit**

This course studies basic drafting skills. Students will complete drafting projects developing skills in Geometric Construction, Lettering, Three-View Projection and Dimensioning. Those desiring to develop basic drafting skills and who have any interest in engineering or architecture are encouraged to participate. This course is a prerequisite to all course offerings in the Drafting area. The class is lab oriented, individualized instruction, and self-paced. Personal initiative is required for success in this class. Course material may be reviewed on the school website, the drafting page.

7150 Computer Aid Drafting (AutoCAD) (Year 2) Dual Credit – 3 credits

**Elective Grades: 10 – 12
Full Year – 1 Credit**

This course teaches students the basic Computer Aid CAD (AutoCAD) skills. Throughout this curriculum students will learn advanced drafting skills including Sections, Auxiliary View, and Working Drawings. This course is a prerequisite to 3D Printing & Mechanical Design and Architectural House Design. Those considering a career in Engineering or Architectural will develop advanced drafting skills that will enhance their college experience. The class is lab oriented, individualized instruction, and self-paced. Personal initiative is required for success in this class. Course material may be reviewed on the school website, the drafting page.

Prerequisite: Fundamental Drafting

7161 3D Printing and Mechanical Design (Year 3 or 4) Dual Credit – 3 Credits

**Elective Grades: 11 – 12
Full Year – 1 Credit**

This course teaches students basic and advanced 3D rendering/modeling within a Autodesk Inventor software. Students will learn the five stages of the design process. Reverse engineering varies projects and 3D print throughout the curriculum. Students will publish varies online models they have designed and learn to work collaboratively with other students from around the State of Montana, on collaborative projects. Those considering a career in Engineering will develop important skills that will enhance their college experience. The class is lab oriented, individualized instruction,

and self-paced. Personal initiative is required for success in this class. Course material may be reviewed on the school website, the drafting page.

Prerequisite: Computer Aid Drafting (AutoCAD)

**7162 Architectural House Design (Year 3 or 4)
Dual Credit – 3 Credits**

**Elective Grades: 11 – 12
Full Year – 1 Credit**

This course studies design techniques used in residential construction, while learning BIM (Building Information Modeling) Autodesk Revit Software. Students will develop a complete set of house plans using standards of planning and construction. Consideration will be given to floor plans, elevation, plot plans, wall sections, and cost of construction. Students considering a career in Architecture will benefit from this class. The class is lab oriented, individualized instruction, and self-paced. Personal initiative is required for success in this class. Course material may be reviewed on the school website, the drafting page.

Prerequisite: Computer Aid Drafting (AutoCAD)

7100 Fundamental Woodworking and Design

**Elective Grades: 9 – 12
Full Year – 1 Credit**

Through demonstrations, lectures and shop experience with wood-working tools, machines, and materials, students become experienced with basic aspects of shop safety, tool use, measuring, drafting plans, and other related materials/activities. Grades are based on craftsmanship, work habits, effort, assignments, tests, and attitude. Students' materials for the basic projects are provided. Students furnish their own materials for their final/personal project.

7170 Intermediate Carpentry and Cabinet Making

**Elective Grades: 10 – 12
Full Year – 2 Credits**

Intermediate Carpentry & Cabinet Making is a 2-period class that prepares students for a career in construction and develops lifelong skills. Students will learn safety, terminology, construction math, hand and power tools used by carpenters, and an overall orientation to the construction trade. Skills will be introduced and reinforced through the design and construction of a model. Lectures and bookwork will cover all aspects of home construction from footings to finish. Upon completion of the model house, students will design and build cabinetry to include door and drawer construction. Demonstrations and safety tests will be given on each machine used. Grades are based upon craftsmanship, techniques, safety, and efficient use of time. Students furnish materials for final/personal projects.

Fundamental Woodworking or Equivalent recommended

7180 Advanced Carpentry and Cabinet Making

**Elective Grades: 11 – 12
Full Year – 2 Credits**

Advanced Carpentry and Cabinet Making is a 2-period class that continues and refines the skills learned in the intermediate class to produce larger, more complex projects. Learning will be achieved through individual projects and independent working. Emphasis will be placed upon Finish Carpentry. Job opportunities and apprenticeships will be available to advanced students through jobsite visits and introductions to community business partnerships. Students furnish materials for personal projects.

Prerequisite: Intermediate Carpentry and Cabinet Making with a minimum "C" grade and instructor approval.

7205 Auto Tech 1

**Elective Grades: 10 – 12
Semester – .5 Credit**

Automotive Technology I is a one-semester course. This is a good class for everyone to take; if you are going to drive a vehicle you should know something about it! And- it's a fun class. At the beginning of the semester students will learn shop safety procedures with a large emphasis on vehicle lifting. After a brief section on tools, we will move into vehicle systems. Students will learn in depth the operation and diagnosis of engine mechanical, fuel, ignition, cooling and lubrication systems. Towards the end of the semester students will learn basic vehicle maintenance including tire service. The method of instruction is a combination of lecture and demonstration, but I work hard to provide as many structured shop activities as possible to provide for a competency-based learning environment. This course is the first of a three-year automotive program. Sophomores are strongly encouraged to take this class so they will have the opportunity to complete all three automotive courses.

7206 Auto Tech 2

Elective Grades: 11 – 12
Full Year – 2 Credit

Automotive Technology II is a two-period, year-long course that will instruct students in shop safety procedures, small engines, electrical systems, brakes, and drivetrain systems. Students will also learn workplace skills to help prepare them for an entry-level position or further training in the automotive industry. The method of instruction will be a combination of lecture and demonstration, to be followed by student practice to provide for a competency-based learning environment. This course is the second of a three-year automotive program.

Prerequisite: Auto Tech 1 with a minimum “C” grade and instructor approval.

7207 Auto Tech 3

Elective Grade: 12
Full Year – 2 Credits

Automotive Technology III is a two-period year-long course that will instruct students in shop safety procedures, steering and suspension, careers, engine performance and HVAC systems as well as review what has been learned in previous classes. Students will learn workplace skills to help prepare them for an entry level position or further training in the automotive industry. The method of instruction will be a combination of lecture and demonstration, to be followed by student practice to provide for a competency-based learning environment. Students are allotted a large amount of time in the shop; they are to use this time efficiently to achieve various repairs and competencies, and a large portion of their grade will be based off flat rate. This course is the final course of a three-year automotive program and is open to Seniors only.

Prerequisite: Auto Tech 2 with a minimum “C” grade and instructor approval.

7230 Welding 1

Elective Grades: 9 – 12
Full Year – 1 Credit

Are you looking for an exciting and fun class that could lead to employment? This one-hour per day class is designed to give you the fundamental knowledge of SMAW(Arc), OFW(Gas) welding, GMAW (MIG) welding, OFC cutting and Plasma cutting along with related subjects and hands on learning. Students will apply the concepts they learned for one project in the second semester. Students will be required to pay for the materials for their personal project. Students must supply their own protective clothing (coveralls, gloves, safety glasses, leather boots, tape measure, pliers and 3 ring binder). See your instructor for information about buying approved safety glasses at a reasonable cost.

7240 Welding 2 **WLDG107 Dual Credit (2 Credits)**

Elective Grades: 10 – 12
Full Year – 2 Credits

Do you like designing and building your own projects using advanced types of welding equipment and technology? Welding II can give you these opportunities, along with the skills to enter the work force and obtain lifelong skills. In this advanced course students will develop skills in out-of-position welding of SMAW, GMAW and GTAW welding. Students will practice on weld coupons until they reach a high enough level of proficiency to consistently produce quality welds. Students will design and draft project plans, develop bill of materials for projects, welding project fabrication, recognize, recall, and recite welding symbols for blueprint reading along with related subjects. Students will have a chance to become American Welding Society certified in welding in the spring. The student will have to pay for the certification on their own. Students must pay for the materials for all personal projects while in class. Students must supply their own protective clothing (coveralls, gloves, safety glasses, leather boots, pliers, tape measure, and MIG pliers). See your instructor for information about buying approved safety glasses at a reasonable cost.

This course can be used to earn dual credit with Helena College OR MSU Northern for 2 credits. Students will need to check with the college they would like to attend in Montana to make sure the credit will transfer from Helena College or MSU Northern to the college of their choice in Montana. Talk to your instructor for more information.

Prerequisite: Completion of Welding 1 with a minimum of “C” grade and written permission from instructor.

7250 Welding 3
WLDG107 Dual Credit (2 Credits)

Elective Grades: 11 – 12
Full Year – 2 Credits

This is an advanced course that will further your welding knowledge. It is primarily a lab-based, project-oriented class designed for employment readiness. The class is designed to prepare the student for post-secondary education or employment. The focus of this course will be to strengthen and advance student welding and engineering skills as they apply to personal metal manufacturing projects, careers, and related industrial certifications. All costs of projects will be assumed by the student. Students will focus on the fabrication of advanced welding projects, strengthening plan and print reading skills, small business mass production project and training for AWS welding certifications with Helena College.

Students must supply their own protective clothing (coveralls, gloves, safety glasses, leather boots, pliers, tape measure and MIG pliers). See your instructor for information about buying approved safety glasses at a reasonable cost. This course can be used to earn dual credit with Helena College for 2 credits OR MSU Northern for 4 credits. Students will need to check with the college they would like to attend in Montana to make sure the credit will transfer from

Helena College or MSU Northern to the college of their choice in Montana. Talk to your instructor for more information.

Prerequisite: Completion of Welding 2 AND instructor's written consent.

7258 Welding 4
WLDG107 Dual Credit (2 Credits)

Elective Grade: 12
Full Year – 2 Credits

This is an advanced course that will further your welding knowledge. It is a lab-based, project-oriented class designed for employment readiness. The class is designed to prepare the student for post-secondary education or employment. The focus of this course will be to strengthen and advance student welding and engineering skills as they apply to personal metal manufacturing projects, careers, and related industrial certifications. All costs of projects will be assumed by the student. Students will focus on writing skills and building a portfolio for employment or post-secondary education. Students will train for AWS welding certifications in conjunction with Helena College. Students must supply their own protective clothing (coveralls, gloves, safety glasses, leather boots, pliers, tape measure and MIG pliers). See your instructor for information about buying approved safety glasses at a reasonable cost.

This course can be used to earn dual credit with Helena College for 2 credits OR MSU Northern for 4 credits. Students will need to check with the college they would like to attend in Montana to make sure the credit will transfer from Helena College or MSU Northern to the college of their choice in Montana. Talk to your instructor for more information.

Prerequisite: Completion of Welding III AND instructor's written consent.

7251 Welding/Manufacturing Work Co-Op

Elective Grades: 11 – 12
Full Year – 1 Credit

Cooperative welding/manufacturing education is a program in which welding students who, through a cooperative arrangement between the school and employers, receive classroom instruction and related on-the-job training in a welding occupation. Students enrolled in Welding II classes are eligible to apply for Welding/Manufacturing Working Co-op Experience. Students accepted for this program will be released from school for one class period each day upon availability of employment and will work in a Helena-area business for at least minimum wage. School credit and grade reflect the number of hours worked and the quality of performance on the job. Students must maintain acceptable classroom grades to remain eligible for release time and credit. Students furnish transportation and must be 17 years old to participate.

Prerequisite: Completion of Welding 2 or Welding 3 with a minimum of "C" AND instructor's written consent

All items can be bought locally. American Welding and Gas and General Distributing give a student discount. Rock Hand, Power Townsend, Murdoch's, Lowe's, and Home Depot. If you have any questions or cannot afford an item, please contact Cindy Galbavy 324-2180 or cgalbavy@helenaschools.org

Welding Supplies for Welding Students

Gloves- they need to have welding gloves and look something like following picture.



Safety Glasses- that are Z87 approved. The first pair is for a student that doesn't wear glasses. The second pair is for students that wear glasses.



This pair fits over glasses.



You can also purchase if you want but I provide welding goggles: Shade 5 glasses

Pliers – They need one pair of following pliers. Please buy cheap pliers.



Boots – They need a pair of leather boots. You can purchase used ones at any thrift store. Here are examples of the boots.



Coveralls 100% cotton or old pair of jeans 100% cotton. Jeans cannot have any frays on them.

or

These coveralls are about \$45.00 or more at Murdoch's, or an old pair of jeans (100% cotton) and this coat is a must and I believe they run around \$30.00 at American Welding & Gas and General Distributing.



Measuring Tape 25'-



Hat – an old hat that is cotton or you can buy a welding cap.



Welpers or MIG Pliers-



9351/9352 Health Careers Explorations

Elective Grades: 11 – 12 Full Year – 2 Credits

The Health Career Exploration Class is a two-hour class (1 credit per semester) designed to provide high school students with the opportunity to develop the skills and knowledge for health occupations. The class is two semesters and is offered as an elective class or for vocational credit to juniors and seniors. The class emphasizes training in medical terminology, basic health care skills, basic human anatomy, safety practices and ethics. Instruction is delivered through the classroom, laboratory, practicum, and job shadowing settings. After successful completion of this class the students will be eligible to obtain a Certified Nursing Assistant certification, and students will find options for employment or further education in health care professions.

Prerequisite: Passing grades in two (2) years of math and (2) years of science as well as successfully completing the application process available from the counseling department.

PROJECT LEAD THE Way® BIOMEDICAL SCIENCES

Project Lead The Way® Biomedical Sciences program is a high school program designed for students interested in Health Science careers. The program is divided into four sections, each section building upon the previous. This dynamic program uses hands-on, real-world problems to engage and challenge students. Students interested in math, science, and the human body will find the PLTW Biomedical Sciences program a great introduction to the numerous medical fields. It will also teach them how the skills they learn are used in the biomedical sciences.

The Biomedical Sciences program is integrated into the high school curriculum. It is designed to augment the high school science and math college preparatory programs to establish a solid background in biomedical science. Courses count for either Career and Technical Education or elective credit.

7610 Principles of Biomedical Science (Biomed 1)

**Elective Grades: 9 – 12
Full Year – 1 Credit**

In this course, students explore concepts of biology and medicine as they take on roles of different medical professionals to solve real-world problems. Over the course of the year, students are challenged in various scenarios including investigating a crime scene to solve a mystery, diagnosing, and proposing treatment to patients in a family medical practice, tracking down and containing a medical outbreak at a local hospital, stabilizing a patient during an emergency, and collaborating with others to design solutions to local and global medical problems.

7620 Human Body Systems (Biomed 2)

**Elective Grades: 10 – 11
Full Year – 1 Credit**

Students examine the interactions of body systems as they explore identity, communication, power, movement, protection, and homeostasis. Students design experiments, investigate the structures and functions of the human body, and use data acquisition software to monitor body functions such as muscle movement, reflex and voluntary action, and respiration. Exploring science in action, students build organs and tissues on a skeletal manikin, work through interesting real-world cases and often play the role of biomedical professionals to solve medical mysteries.

Suggested prerequisite: 7610 Biomed 1 or Biomed teacher approval.

7630 Medical Interventions (Biomed 3)

**Elective Grades: 11 – 12
Full Year – 1 Credit**

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

Suggested prerequisite: 7620 Biomed 2 or Biomed teacher approval.

7640 Biomedical Innovations (BioMed 4)

**Elective Grades: 12
Full Year – 1 Credit**

Students in Biomedical Innovations (Biomed 4) will be challenged with project-based learning by conducting independent research, designing an innovation, exploring environmental health, applying real-world experience for improving emergency medicine and completing an independent project in an area of interest. This course is designed to provide students time to immerse themselves in solving real-world problems. Students will present their work to the community at the end of the year. This course is designed for 12th grade students that want to further their knowledge in biomedicine and improve their research skills.

Suggested prerequisite: Either 7630-Medical Interventions or three science classes (or concurrently enrolled in the 3rd science class).

BUSINESS INFORMATION TECHNOLOGY, MARKETING AND COMPUTER SCIENCE EDUCATION

The ability to use computers to perform everyday tasks is one of the most important skills for the 21st Century. Business-related skills permeate every aspect of our lives, regardless of our chosen career field. These skills will also carry over into all other high school curriculum.

In today's technological world, business skills give the extra edge when competing for jobs whether in Montana, the United States, or the world. The Business Information Technology program at Helena High helps to prepare students by placing emphasis on the development of each student's ability and potential. Work ethics are learned through everyday class procedures. A cooperative work experience is available to upper-level students; membership in Business Professionals of America, a co-curricular student organization, is an option.

Marketing Education is a process composed of activities designed to create exchanges that satisfy individual and organizational objectives. The Marketing Ed, Sports and Entertainment Management, Small Business Management and SBM II courses are designed around national standards for Marketing Management, Entrepreneurship, and Business Administration. All of these courses are designed to help deliver a good or service to users/consumers, change behaviors, or influence ideas. Career opportunities in marketing can be found in all types and sizes of business. In the 21st century, economic survival in nearly any business setting or profession will depend on the ability to understand and execute business skills such as marketing. Marketing Education provides those skills.

Business and Marketing Education Course Offerings

Freshmen Year	Sophomore Year	Junior Year	Senior Year
7330 Career Planning	7310 Personal Finance	7310 Personal Finance	7310 Personal Finance
7331 Law and Justice	7330 Career Planning	7330 Career Planning	7330 Career Planning
7398 Bengal Computer Apps	7340 Law and Justice	7340 Law and Justice	7340 Law and Justice
7400 Marketing I	7370 Accounting I	7370 Accounting I	7370 Accounting I
	7398 Bengal Computer Apps	7380 Business Co-Op	7380 Business Co-Op
	7400 Marketing I	7398 Bengal Computer Apps	7398 Bengal Computer Apps
		7400 Marketing I	7400 Marketing I

7310 Personal Finance

Elective Grades: 10 – 12
Full Year – 1 Credit

Personal Finance uses an experiential and simulation environment to provide students hands-on personal finance skills for life that includes investing, savings, credit management, career planning, college funding, retirement planning, employment related forms, employment benefits, filing taxes, time management, banking, check writing and account management, renting and home ownership, automobile financing, insurance and more.

7331 Career Planning

Elective Grades: 9 – 12
Semester – .5 Credit

Career Planning is a semester class that uses a variety of technology and keyboarding tools to help students determine career possibilities and identify educational requirements for those careers, create letterheads, resumes and cover letters, as well as guide students through the job search process, interview process and career development process.

7340 Law and Justice

Elective Grades: 9 – 12
Semester – .5 Credit

This class provides a wide exposure to the legal rights and responsibilities of people in many circumstances, Law and Justice covers a broad base of everyday legal activities in which an individual is likely to become involved. Topics include criminal and civil law, contracts, consumer protection, and personal property. Guest speakers from Helena's legal community enhance the content of the class. Students will participate in a mock trial experience, putting court procedures into practice.

7370 Accounting 1**ACTG101 Dual Credit Helena College (3 Credits)****Elective Grades: 10 – 12****Full Year – 1 Credit**

Accounting is the language of the business world. Accounting will help students understand the financial activities of a business and will better prepare them to prepare business financial records. Students will learn the basic principles of the accounting cycle from analyzing and recording everyday transactions to preparing and interpreting financial statements and supporting data. Activities from both a service and merchandising business will be emphasized. Payroll deductions and related payroll taxes are also covered. Students will utilize the manual accounting method.

This class may be taken for UM-Helena college credit and Helena High credit. Students wishing to pursue Accounting 2 can do so as an Independent Study, based on instructor approval.

7380 Business Co-Op Work Experience**Elective Grades: 11 – 12****Full Year – 1 Credit**

Cooperative business education is a program in which business students who, through a cooperative arrangement between the school and employers, students receive classroom instruction and related on-the-job training in a business occupation. Students accepted for this program will be released from school for one class period each day upon availability of employment and will work in a Helena-area business for at least minimum wage. School credit and grade reflect the number of hours worked and the quality of performance on the job. Students must maintain acceptable classroom grades in order to remain eligible for release time and credit. Students furnish transportation and must be 16 years old to participate. **Students in all business classes qualify.**

Prerequisite: Instructor approval and signature

BENGAL BUSINESS – COMPUTER APPLICATIONS

Bengal Business – Computer Applications requires students to behave as would be required in a real-world situation. Students clock-in at the beginning of each period and their success is determined by completion of class modules, which are completed at their own pace.

7398 Microsoft Office Excel**Elective Grades: 10 – 12****Semester – .5 Credit**

Skills covered in this course are the skills needed to get the most out of Excel by earning the Microsoft Office Specialist: Excel Associate certification. This certification demonstrates competency in the fundamentals of creating and managing worksheets and workbooks, creating cells and ranges, creating tables, applying formulas and functions, and creating charts and objects.

MARKETING EDUCATION

Marketing Education prepares students in the area of marketing, business and communications. Strategies of these classes will strengthen students' knowledge in entrepreneurship, management, product planning and development, advertising, and promotion.

The program primarily uses the “hands-on” approach to learning including actual product development and operation of the Helena High School store, the *Catty Shack*. Job Co-Op is another actual work experience option available to students enrolled in Marketing 1 or, Small Business Management. In addition, students are eligible to take advantage of DECA membership allowing for participation in community service projects, event planning, competition, and travel!

7400 Marketing 1**Elective Grades: 9 – 12****Full Year – 1 Credit**

Marketing 1 is intended for those who want to learn business operations and develop basic employment skills. If you want to continue your education in business administration, management, marketing, advertising, public relations or simply choose to enter the business world, give this course serious thought. You will receive experience in business communications, sports and entertainment marketing, product development, business planning, advertising-including social and digital media marketing, sales, and customer service. This class also allows for opportunities in DECA which plans and implements Night to Shine and options to compete at state and national levels in marketing and business entrepreneurship. Vocational or elective credit can be applied to this class.

7411 Small Business Management Year 1/Catty Shack Elective Grades: 10 – 12
Small Business Management Year 2/Catty Shack 1 Credit per Year
Dual Credit (3 Credits) – University of Iowa

Small Business Management 1 & 2 (SBM) is an advanced course in business ownership, management and marketing. You will study entrepreneurship topics covering merchandising and display, financing, advertising layout and design, and additional aspects of creating a business plan. This class primarily revolves around operating the Helena High School store, the Catty Shack. The Catty Shack is a retail-training laboratory which provides opportunity for development of skills and knowledge through “hands-on” experience in purchasing, selling, pricing, promotion, product and service planning, customer service, individual and group critical thinking and decision-making skills.

Vocational or elective credit can be applied to this class.

Prerequisite: Small Business 1 for Small Business 2

COMPUTER SCIENCE

7309 Robotics

Elective Grade: 9 – 12
Full Year – 1 Credit

Robotics will offer students the opportunity to design, build, and program a variety of robots as they apply the fundamentals of science, math, and technology. Students will learn and apply coding, inverse kinematics, electronics, and principles of engineering during construction and testing. This course does not replace the traditional math and science courses needed to pursue a degree in engineering but instead supplements the experience so students will appreciate the connection between robotics and engineering. Students should have a high interest in robotics.

Prerequisites: Algebra I (B or higher) and keyboarding skills. Recommended prerequisite: Geometry (B or higher)

7312 Computer Science Principles (AP Option)

Elective Grades: 9 – 12
Full Year – 1 Credit

Computer Science Principles is an introductory course into computer systems, data, the internet, cybersecurity, and programming. NO background coding knowledge is needed. We will explore many aspects of programming, including functions, lists, loops, traversals, parameters, returns, and libraries. This course uses the programming language JavaScript in App Lab as our programming environments, so students will be coding fun and helpful apps that can be downloaded onto their phones. The AP test consists of a multiple-choice section as well as a create task, to which we will devote at least 10 hours of class time, where students will have flexibility and freedom to create their own exciting program. After the AP test, we will have an opportunity to explore other interesting topics in computer science.

7314 Computer Science A (AP Option)

Elective Grades: 10 – 12
Full Year – 1 Credit

CSA is a second-year course for students who have completed Computer Science Principles and would like to further explore topics in coding and computer science. We will be coding using Java as our programming language, still in code.org. Java is an object-oriented programming language that will allow us to explore many exciting topics and projects throughout the year, including processing strings and arrays, writing complex conditional statements, using sorting algorithms, and developing classes. Join this class for opportunities to showcase your computer science creativity.

Prerequisite: Completion of Computer Science Principles or completion of Algebra II.

FAMILY AND CONSUMER SCIENCE – CULINARY ARTS

CTE Industries / Pathway: Hospitality & Tourism

Dual Credit Option: Missoula College, Course 105 Safety and Sanitation

Certification Option: *ProStart* – National Restaurant Association

The Culinary Pathway includes a sequence of four courses leading to a career in the Hospitality and Tourism industry. Intro to Culinary Arts is open to 9-12 as a semester class for developing personal cooking and nutrition skills. Students in **Culinary I, II and III** utilize the National Restaurant Association curriculum *ProStart*. Culinary I and II develop the students’ skills in culinary arts and expose the students to the world of professional cooking. Students have opportunities to work with industry partners in outside catering and events. Culinary III is the capstone experience for the culinary student, offering the opportunity for dual credit from Missoula College in Safety and Sanitation, externships with local chefs and state and national competitions.

Culinary I, II and III are 2-hour block classes for students (10-12 grade) who have successfully passed **Intro to Culinary** or can pass the class final exam with work experience knowledge. Application details are available from the counseling center.

7520 Intro to Culinary Arts and Nutrition

Elective Grades: 9 – 12
Semester – .5 Credit

The first course of the series is **Intro to Culinary Arts** is open to all students, one semester. The course is designed to introduce basic nutrition and cooking skills for individual and family cooking. The course is based on a whole foods approach with an emphasis on sustainability, local, and fresh foods, safety and sanitation, nutrition basics, the relationship between disease and diet and food culture in American life.

7531 Culinary I

Elective Grades: 10 – 12
Semester – 1 Credit

Culinary I is an exciting and innovative hospitality/culinary arts education designed specifically for students interested in a career in the food and hospitality industry. The course is based on the National Restaurant Association program, **ProStart**, which provides classroom training in all aspects of culinary careers including job seeking skills, management, nutrition and food preparation skills. Two-hour block class, signature of instructor required with application. Application available in Rm 50 or Counseling Office.

Prerequisite: Intro to Culinary Arts 7520 or signature of instructor with passing semester exam at 75% without class pre-requisite.

7541 Culinary II

Elective Grades: 10 – 12
Semester – 1 Credit

Culinary II continues the study of a professional career in hospitality /culinary arts. Catering for the school events will be part of the culinary arts curriculum. Two-hour block class, signature of instructor required with application. Application available in Rm 50 or Counseling Office.

Pre-Requisite: Culinary I (7531)

7540 Culinary III

Elective Grades: 11 – 12
(Spring) Semester – 1 Credit

Culinary III is the capstone experience for students who have successfully completed Intro, Culinary I and II. **Safety and Sanitation 105 – is integrated into the class for those who would like dual credit / manager certificate from ServSafe.** Students may be involved in a competition team, training with a chef mentor and work independently in externships/internships in the community. Application available in Rm 50 or Counseling Office.

Pre-Requisite: Culinary II (7541)