

CAREER & TECHNOLOGY EDUCATION (CTE)

AGRICULTURE DEPARTMENT

NOTE: Two years of Agriculture 1, Forestry, or Ag Resources/Rural Recreation may be taken to meet the one year of Life Science required for graduation. Agriculture 1 and Agriculture Business are UC approved electives. **Sustainable Agriculture Biology** is a UC approved lab science course. Floral Design is a UC approved fine art course.

AGRICULTURE 1 (Introduction to Agriculture) (Freshmen only)

This course is designed to meet UC elective requirements and to teach introductory students the definition of agriculture and the varying aspects of the agriculture industry. Using a hands-on, student-centered approach of study, students will be introduced to general and specific knowledge of skills and understanding in the following units of study: Ag Business, Natural Resources, Soil Science, Plant Science, Animal Science, Ag Mechanics and Ag Careers. In addition to this, students will be introduced to the Future Farmers of America (FFA) program and the Supervised Agricultural Experience program where first year students will create an acceptable plan for an individual agriculture project to be carried out through the year.

SUSTAINABLE AGRICULTURE BIOLOGY (10th -12th Graders)

Prerequisite: Agriculture 1

This course is designed to integrate biological science practices and knowledge into the practice of sustainable agriculture. This class is for students who plan to enter a college and/or university with a major or emphasis in agriculture or related field. The class meets life science graduation requirements as well as University of California one-year laboratory science admission requirements. This course is organized into four major sections each with a guiding question: What is sustainable agriculture? How does sustainable agriculture fit into our environment? What molecular biology principles guide sustainable agriculture? How do we make decisions to maximize sustainable agricultural practices within a functioning ecosystem? Students are required to participate in the FFA leadership organization and to have an ag related project outside of class (SAE).

AGRICULTURE BUSINESS (10th – 12th Graders)

This course is designed for advanced study in agriculture with the emphasis on business. Through the course, the students will understand and apply basic business principals as they relate to individual consumers, production agriculture, and agri-business management. Current agriculture issues will be a main focus of the class. Students will explore career options and pathways through guest speakers from agriculture based businesses. Career / college prep skills such as resumes, job applications, interview skills, and college and scholarship applications will be included. The students will intern at a local Agri-Business site determined by the instructor during the second semester.

AGRICULTURE AND SOIL CHEMISTRY (11th -12th Graders)

This course explores the physical and chemical nature of soil as well as the relationships between soil, plants, animals and agricultural practices. Students will examine properties of soil and land and their connections to plant and animal production. Using knowledge of scientific protocols as well as course content, students will develop an Agriscience research program to be conducted throughout the first semester of the course. To complete that whole project each student will investigate and test an Agriscience research question by formulating a scientific question related to the course content, formulating a hypothesis based on related research, conducting an experiment to test the hypothesis, collecting quantitative data, and forming a conclusion based on analysis of the data. The result of this research program will be an in depth research and experimentation paper that is technically written, based on scientific protocol, and cited using APA formatting. Additionally, students will develop and present a capstone soil management plan for agricultural producers, using the content learned throughout the course. Throughout the course, students will be graded on participation in intracurricular FFA activities as well as the development and maintenance of an ongoing Supervised Agricultural Experience (SAE) program.



AGRICULTURE MECHANICS 1 (10th – 12th Graders)

Prerequisite: Successful completion of Agriculture 1.

Classroom instruction and shop practice will be combined in a manner designed to supply students with the knowledge and skills required for entry into and successful progress in certain agricultural mechanics occupations. The units of instruction included in the program will provide basic skills and knowledge in safety, construction, welding, equipment operation and repair, metal cutting, basic fabrication, plumbing, electricity, concrete, and farm machinery. Understanding of mechanical theory presented in class, shop safety, ability to work well with classmates, general work habits and clean-up will be emphasized.



AGRICULTURE MECHANICS 2 (11th – 12th Graders)

Prerequisite: Agriculture Mechanics 1 or Concurrent Enrollment.

This advanced class is designed to supply students with a further depth of study into the agriculture mechanics curriculum. Student will practice and learn more advanced skill sets in the areas of welding, farm and ranch repair and maintenance, fabrication, design and layout, and problem solving. The ability to work well with classmates, work ethic, safety, general work habits and clean-up will be emphasized.

AGRICULTURE MECHANICS 3 (11th – 12th Graders)

Prerequisite: Agriculture Mechanics 1 & Agriculture Mechanics 2 or Concurrent Enrollment

Classroom instruction and required shop practice will be combined to supply students with the knowledge and skills required for entry into agriculture mechanics occupations. This class is an opportunity to demonstrate the skills mastered in Agriculture Mechanics 1 & 2 through the completion of personal shop projects.

AGRICULTURAL RESOURCES AND RURAL RECREATION (10th - 12th Graders)

This class explores topics related to our natural resources and the role they play in the field of agriculture and outdoor recreation. Students study topics such as wildlife management, water conservation, soils, forestry, fisheries management, survival, camping and backpacking, water safety, national park systems, and wild land management. Career preparation and opportunities will be discussed with every unit. Students interested in careers or college majors with a focus on agriculture, natural resources, recreation administration, fisheries, or wildlife will benefit from this class.

FLORAL DESIGN (10th - 12th Graders)

This course meets the fine art graduation requirement as well as the University of California fine art requirement for admission. Students will learn artistic concepts and then apply the skills to hands on floral projects including arrangements and corsages, as well as principles of irrigation, plant selection and proper planting techniques. Students will learn to recognize balance within an arrangement, along with scale, color and depth. Portfolio development, record books, FFA and SAE are also included.



FORESTRY (10th - 12th Graders)

This class will introduce students to wild land management techniques on both practical and scientific concepts. The students will learn to cruise timber for sales, set line for both main and spur logging roads, determine where to put skid trails and indicator plant identification, silviculture techniques, small land owner challenges, and environment and land coexistence practices.

The class will explore the concepts of how to gain the highest lumber production while striving to maintain an ecological balance for soil, wildlife and watershed. Highlights may include trips to the forest area to observe falling, skidding, hauling, setting boundaries, determining log scale and species, industry representatives with discussions and presentations of real work in Forestry and Land Management.

CULINARY ARTS

CULINARY ARTS 1 - Beginning Foods

This is a lab course designed to develop an understanding of basic food preparation and nutrition. Emphasis will be placed on learning to cook foods from the five food groups. Units on proper use and care of equipment, money management, safety and sanitation while cooking. A \$10 shop fee may be required for special cooking projects.

CULINARY ARTS 2 - Intermediate Foods

This lab course is designed to continue nutrition and food preparation concepts learned in Beginning Foods. A \$10 shop fee may be required for special cooking projects.

CULINARY ARTS 3 (RESTAURANT OCCUPATIONS) - 2 Periods

Prerequisite: A grade of "C" or better in Advanced Foods or approval of teacher. 11th – 12th Grade

A combination of class work, cooking and possible internships in local restaurants will help you to prepare and establish a foundation for either immediate opportunities in the food service/hospitality industry or to further your learning in culinary programs at the college level. Some areas covered include food preparation, basic accounting and cooking math, workplace safety, communications, and foods for special diets. Examples of foods that we will make are yeast breads, fresh pasta, sauces, various foods from around the world, etc. The class will also be in charge of various catering jobs throughout the year.



INFORMATION & COMPUTER TECHNOLOGY

ICT 1 INTRO TO GAME DEVELOPMENT

This course uses the game maker software to study and experience the art of game development. The game maker platform offers a combination of drag and drop programming and scripting. The topics include a survey of game development, game design, creating game art objects, game scripting, and game documentation. **This is a "g" college approved elective** and dual enrollment through College of the Redwoods.

ICT 2 PROGRAMMING FUNDAMENTALS

Using the programming language Python and Minecraft students will gain an introduction to the fundamental concepts and models of the basic concepts of computer programming. Topics include program design, data structures, programming, problem solving, programming logic, and fundamental design techniques for event-driven programs. This class is a **"C" college approved mathematics course** and dual enrollment through College of the Redwoods.



INDUSTRIAL TECHNOLOGY DEPARTMENT

NOTE: Although a grade of C or better is recommended in all advanced courses, placement must be provided for a “D” student in the area of his/her choice. The department recommends that the “D” student obtain permission from the instructor before enrolling in advanced courses.

AUTOMOTIVE

AUTO 1

This class is a “hands-on” program. Most of the time will be spent working on the engines and components. Students will learn skills needed to do work on his/her own car. The units of study are basic engine rebuilding, fuels and carburetion, ignition systems, batteries and generators, starter motors and controls, smog devices, brakes, and lubrication.

AUTOMOTIVE SERVICES

There is a continual demand for qualified auto mechanics throughout the United States to work as a tune-up person, brake adjuster, front-end alignment person, lubrication service attendant and parts distributor. Training occurs in a modern automotive repair facility equipped with the latest diagnostic tools. This training program is hands-on with an opportunity for you to learn valuable job skills that will prepare you for automotive related jobs in the 21st century. Job placement opportunities may be available for further training.



AUTOMOTIVE SERVICE OF EXCELLENCE (ASE) ACADEMY (11th – 12th Grade)

Prerequisite: Two years of automotive classes required and/or teacher recommendation.

The Automotive Service Excellence (ASE) training program prepares students to develop skills in four of the ASE Certified areas: braking systems; steering/suspension; engine performance; and, electrical systems. Students will learn all aspects of becoming a professional ASE Certified Automotive Technician and will be able to take the national ASE Certification exam in these four areas. The program articulates with both private and public post-secondary programs to allow students the opportunity to work in all eight ASE certified program areas.

METALS/MACHINE SHOP

WELDING AND METAL FABRICATION 1

In this class Students learn the processes and technical knowledge that is used in the metals industry. Some of the topics that are covered include basic metallurgy, casting, forging, arc welding, oxyacetylene cutting/welding, machining, and sheet metal.

\$12.50 PER SEMESTER SHOP FEE APPLIES

*STUDENTS ARE REQUIRED TO PROVIDE PERSONAL SAFETY GLASSES.

WELDING AND METAL FABRICATION 2

Prerequisite: Welding and Metals Fabrication 1

The main focus of this class is to bring students welding skills up to proficient industry standards. Once they have demonstrated their welding skills then they can work on specific projects of their own design. Some of the projects that have been done in the past include; trailers, wood stoves, agricultural equipment, bumpers, truck racks, and go carts. Students that complete three major projects are eligible for a certificate of completion and articulate the class to College of the Redwoods for credit.

\$12.50 PER SEMESTER SHOP FEE APPLIES

*STUDENTS ARE REQUIRED TO PROVIDE PERSONAL SAFETY GLASSES.

INDUSTRY PRACTICUM / METAL

Prerequisite: Welding and Metal Fabrication 1 and Welding and Metal Fabrication 2

In this class students produce metal projects that they can transition to real world working skills. This class is for three and four year students that have demonstrated exceptional ability in metal and are capable of designing and constructing projects with minimal teacher guidance. There are also internships where students receive credit for working in industry. This class is left up to the individual and grades are assigned productivity and participation.

\$12.50 PER SEMESTER SHOP FEE APPLIES

*STUDENTS ARE REQUIRED TO PROVIDE PERSONAL SAFETY GLASSES.

WOODWORKING

Projects created by students are annually submitted in Industrial Arts competitions at the county- and statewide level, receiving many ribbons and awards. These courses are one year in length and fulfill an elective graduation requirement at Fortuna High School.

WOODWORKING 1

In the first semester the students learn the proper safety and uses of the tools and equipment in the shop. Each new process is taught with a combination of project work and in class activities. Units include hand tools, glues, finishes and power tools. The second semester concentrates on specific joinery and assembly processes that build upon the knowledge that is gained in the first semester.

\$12.50 PER SEMESTER SHOP FEE APPLIES

*STUDENTS ARE REQUIRED TO PROVIDE PERSONAL SAFETY GLASSES.



WOODWORKING 2 / CABINET MAKING

Prerequisite: Completion of Woodworking 1

In the first semester of Advanced Woodshop students learn the basics of cabinet making through the only assigned project. After the students complete their assigned project they are required do a project of their own design and funding. Projects that have been done in the past include; desks, chairs, tables, cabinets, beds and boats. Students that complete three major projects in the shop are eligible for a certificate of completion in fine woodworking from the instructor and the ability to articulate the class for credit at College of the Redwoods.

\$12.50 PER SEMESTER SHOP FEE APPLIES

*STUDENTS ARE REQUIRED TO PROVIDE PERSONAL SAFETY GLASSES.

INDUSTRY PRACTICUM / WOOD

Prerequisite: Woodworking 1 and Cabinetmaking

In this class students produce wood projects that they can transition to real world working skills. This class is for three and four year students that have demonstrated exceptional ability in wood and are capable of designing and constructing projects with minimal teacher guidance. There are also internships where students receive credit for working in industry. This class is left up to the individual and grades are assigned productivity and participation.

\$12.50 PER SEMESTER SHOP FEE APPLIES

*STUDENTS ARE REQUIRED TO PROVIDE PERSONAL SAFETY GLASSES.