

# Agricultural Education Courses and Pathways

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## Basic Agriscience Pathway

### Introduction to Agricultural Science and Technology

This course is for any student that has an interest in a career path in the agriculture industry. It offers an exciting approach to discovering today's agriculture career paths and core technical skill development. This course will provide basic necessary skills in each of the 7 Agricultural and Natural Resources Career Paths: Food Systems, Animal Systems, Plant Systems, Natural Resources, Environment, Ag Mechanization, & Ag Business. Includes Orientation to Student Organization (FFA) and Supervised Agricultural Education Experiences (SAE). This course is a prerequisite to all agriculture programs of study.

### Fundamentals of Agriculture Science and Technology

Fundamentals of Ag Science and Technology continues the core skill development in each of the 7 Agricultural and Natural Resources Career Paths: Food Systems, Animal Systems, Plant Systems, Natural Resources, Environment, Ag Mechanization, & Ag Business. Student Organization (FFA) involvement and Supervised Agricultural Education Experiences (SAE) (Work-based learning) expands. This course is a prerequisite to all agriculture programs of study.

## Advanced Agriscience Pathway

### Principles of Animal Science & Husbandry

This class will continue to build upon student's public speaking skills and record keeping abilities. This class will explore the animal science industry. This class is for Juniors and Seniors interested in the agricultural industry. The prerequisites for this class include Ag Science and Technology. This class is designed as a two year course, with topics merging within two years to complete the course. Topics that will be covered will include, but not be limited to, animal reproduction, embryo transfer, artificial insemination, ruminant nutrition, genetics, feeds formulation, livestock handling, livestock marketing, and record keeping. FFA will also be incorporated into the class, where students will be required to have an SAE in place and be keeping record books on it.

### Beef Reproduction and Biotechnology

In the reproduction class, students first learn how to do in vitro fertilization. Students learn how to make test tube embryos in order to see how complicated the process is naturally. Once they understand the basics of in vitro, students are introduced to the concepts of artificial insemination and embryo transfer respectively. All of the concepts are taught in the classroom first. After students understand what they are preparing to do, they go on to actually learn how the specified activity is done. This is a very hands on activity in which students will be working with real cows and live embryos.

## **Advanced Agriscience Pathway, Cont.**

### **Plant and Soil Science**

This class will continue to build upon student's public speaking skills and record keeping abilities. This class will explore the industry of Agronomy. This class is for Juniors and Seniors interested in the agricultural industry. The prerequisites for this class include Ag Science and Technology. This class is designed as a two year course, with topics merging within two years to complete the course. Topics that will be covered will include, but not be limited to, plant growth and development, germination, soil science, soil structures, home site evaluation, noxious weeds, Yuma county crops, irrigation methods, cultivation methods, forage crops, harvesting, seed and plant identification, pesticide use, fertilizer requirements, wildlife habitat, environmental science, government programs to assist farmers, and record keeping. FFA will also be incorporated into the class, where students will be required to have an SAE in place and be keeping record books on it.

### **Turf and Landscape Management**

Turf and Landscape Management will continue to build upon students public speaking skills and record keeping abilities. This class is for any student that is interested in golf course management, sprinkler systems, lawn care, and landscape design. This class will utilize the CAD programs in the computer lab in assisting with the design of landscapes and sprinkler systems. Areas of study will also include grasses, growing seasons, fertilizer rates, weed control, shrubs and tree identification, and any other aspect of the turf and landscape industry. Students have the opportunity to travel across the state competing and gaining valuable leadership and life skills in the FFA. FFA will also be incorporated into the class, where students will be required to have an SAE in place and be keeping record books on it.

### **Horticulture**

The Horticulture class will continue to build upon student's public speaking skills and record keeping abilities. This class is for Juniors and Seniors that have an interest in horticulture and landscape design. Students will have the opportunity to expand their knowledge in the following areas: greenhouse management, plant growth, ornamental horticulture, landscape design, annual and perennial plant identification, weed control, and book keeping skills. This will be a 2nd semester class that is designed to have a lot of "Hands On" learning. FFA will also be incorporate into the class, where students will be required to have an SAE in place and be keeping record books on it.

## **Agribusiness Pathway**

### **Agribusiness Management**

The Agribusiness Management class will continue to build upon students' public speaking skills and record keeping abilities. This class is for Juniors and Seniors that have an interest in farm business management, marketing, or any other aspect of agricultural business. This class is designed as part of a two-year sequence, with topics merging with Animal Science, Soils/Crops Science, and Horticulture. This class will give students the opportunity to watch and study the agricultural industry and markets. The students will develop their skills in areas such as parliamentary procedure, debating agricultural issues and topics, financial management, business structures, agricultural sales and services, future contract, stock exchanges, product development, computerized farm records, budgeting, cash flow income statements, and many other aspects dealing with agribusiness and marketing. FFA will also be incorporated into the class, where students will be required to have an SAE in place and be keeping record books on it.

## **Agricultural Communications and Journalism**

Ag Communications and Journalism will continue to build upon students public speaking skills and record keeping abilities. This class will explore the agricultural communications opportunities through speeches, television opportunities, radio advertising, magazine articles, and newspaper articles. Students will have the opportunity to explore the advertising industry as well as the public markets and journalism. Students have the opportunity to travel across the state competing and gaining valuable leadership and life skills in the FFA. FFA will also be incorporated into the class, where students will be required to have an SAE in place and be keeping record books on it.

## **Power Structural and Technical Systems Pathway**

### **Agricultural Mechanics**

The Ag Mechanics class will continue to build upon students public speaking skills and record keeping abilities. This class will also allow students to develop their skills in welding, project design and construction, tool use, and farm carpentry. Students will also learn to read plans, figure bills of materials, and time management skills. The remainder of the class will be set by the State Ag Mechanics CDE for each year. This class will be a self paced class that is very “hands on.” Students will be constructing projects in the shop to continue developing the skills learned in the Basic Shop Skills class. Students have the opportunity to travel across the state competing and gaining valuable leadership and life skills in the FFA. FFA will also be incorporated into the class, where students will be required to have an SAE in place and be keeping record books on it.

### **Agricultural Design and Fabrication**

Ag Design and Fabrication will continue to build upon students public speaking skills and record keeping abilities. This class will utilize the Computer Aided Drafting software on the computers, also known as CAD. Students will gain knowledge in the designing of buildings, trailers, landscapes, and many other items by using the CAD program. Students will also learn management skills, public relation skills, and teamwork skills. They will also gain knowledge in building and reading detailed blueprints and plans, develop detailed bills of materials, and purchasing skills. Students will learn these skills and then they will design their own building, or structure, and then they will construct this structure from the blue prints and bill of materials. Students have the opportunity to travel across the state competing and gaining valuable leadership and life skills in the FFA. FFA will also be incorporated into the class, where students will be required to have an SAE in place and be keeping record books on it.

## **Natural Resources and Environmental Science Pathway**

### **Outdoor Recreation and Natural Resources**

This course combines the science of natural resource management, outdoor recreation and wildlife management. This course will consist of how natural resources are managed for public use and the issues facing future development of the City, State and National park systems. In addition, students will create a powerpoint presentation involving a study of a current issue in public land or water use. As a final project, students will travel to a park system to explore recreational issues discussed in class.

### **Natural Resources Management**

This course of study focuses on wildlife biology. Topics will include: wildlife identification, anatomy and physiology and life cycles. In addition, an aquaculture section for raising aquatic animals will be included. Students will also report of current issues facing wildlife management. Class time will be divided between classroom instruction, hands-on activities, guest speakers as well as field trips. This class counts as a science elective.