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## **Ridgewood High School Agriculture Classes**

### **Agricultural Education**

#### **Agriculture, Food, & Natural Resources**

(AFNR) Elective 9

This is the first course in the Agricultural and Environmental Systems career field. It introduces students to the pathways that are offered in the Agricultural and Environmental Systems career field. As such, learners will obtain fundamental knowledge and skills in food science, natural resource management, animal science & management, plant & horticultural science, power technology and biotechnology. Students will be introduced to the FFA organization, initiate their SAE project(s), and begin development of their leadership ability.

Pre-Requisite: Freshman Two Semesters: 1.25 Credits

Fee: \$25 FFA Dues & Project Costs (TBD)

Student must schedule one supervised agricultural experience (SAE) project with any of the classes listed below

#### **Animal Science & Technology**

Elective 10 - 12

Students will learn responsible animal management principles and routine husbandry practices in relation to animal welfare and behavior. Learners will identify and describe the anatomy and physiology of monogastric and ruminant organisms as it applies to nutrition, reproduction, and animal health. Learners will investigate animal genetics and how it impacts principles of animal improvement, selection, and marketing. Learners will focus on the animal aspect of agriculture, but will also explore topics such as electricity and metal fabrication. Learners are mandated to participate in the FFA organization, complete their SAE project(s), and continue to develop their leadership ability.

Pre-Requisite: Sophomore/Junior/Senior Two Semesters: 1 Credit

Fee: \$25 FFA Dues & Project Costs (TBD)

#### **Plant & Horticultural Science**

Elective 10 - 12

Students will apply principles and practices of plant physiology and anatomy, plant protection and health, reproductive biology in plants, influences in bioengineering, plant nutrition and disorders. Environmental aspects of irrigation, chemical application, soils, and pest management

will be studied and applied. Learners will focus on the plant aspect of agriculture, but will also explore topics such as small gasoline engines and masonry. Learners are mandated to participate in the FFA organization, complete their SAE project(s), and continue to develop their leadership ability.

Pre-Requisite: Sophomore/Junior/Senior Two Semesters: 1 Credit

Fee: \$25 FFA Dues & Project Costs (TBD)

### **Natural Resources**

Elective 10 – 12

Learners will apply science principles and management practices to the protection of renewable and non-renewable natural resources. Students will learn fundamentals of land use as well as watershed, wildlife, fishery, and forest management. Learners will apply principles of facility design and layout for managing fish populations. Students will be introduced to management practices related to managing air and water quality along with requirements for managing waste. Learners are mandated to participate in the FFA organization, complete their SAE project(s), and continue to develop their leadership, communication, and business skills.

Pre-Requisite: Sophomore/Junior/Senior Two Semesters: 1 Credit

Fee: \$25 FFA Dues & Project Costs (TBD)

### **Agricultural Structural Engineering**

Elective 10 – 12

Students will apply principles of engineering and design along with an understanding of the properties and uses of construction materials to buildings and structures used in agriculture, horticulture, and natural resources. The course will focus on the study and utilization of wood and lumber, metals, concrete and masonry, pipes and plumbing, and electrical systems. Students will design, plan, build, and calculate costs-benefits analysis for construction projects while abiding by all building codes and safety regulations. Learners are mandated to participate in the FFA organization, complete their SAE project(s), and continue to develop their leadership ability.

Pre-Requisite: Sophomore/Junior/Senior Two Semesters: 1 Credit

Fee: \$25 FFA Dues & Project Costs (TBD)

### **Livestock Science**

Elective 10 – 12

Learners will apply principles of nutrition, health, and reproduction to the management of animals, poultry, and fish in production agriculture. Learners will demonstrate understanding of anatomy and physiology and apply genetic principles for improvement. Learners will apply knowledge of animal behavior, welfare, and husbandry principles. Learners will evaluate body/carcass composition and apply marketing principles to the sale and distribution of livestock products. Learners are mandated to participate in the FFA organization, complete their SAE project(s), and continue to develop their leadership ability.

Pre-Requisite: Sophomore/Junior/Senior Two Semesters: 1 Credit

Fee: \$25 FFA Dues & Project Costs (TBD)

### **Agricultural And Industrial Power**

Elective 10 – 12

The A & I Power course will introduce students to the breadth of the Agricultural and Industrial Power Technology pathway. Students will learn the principles of agricultural and industrial power technology equipment systems including electronic, electrical, engines, fuel, hydraulics, and power trains. Additionally, students will learn to operate and maintain agricultural & industrial equipment. Learners are mandated to participate in the FFA organization, complete their SAE project(s), and continue to develop their leadership ability.

Pre-Requisite: Sophomore/Junior/Senior Two Semesters: 1 Credit

Fee: \$25 FFA Dues & Project Costs (TBD)

### **Agricultural & Environmental Systems Capstone (Co-Op)**

Elective 12

The capstone course is an opportunity for students to solve problems and demonstrate that they have achieved the requisite knowledge and skills in their chosen Agricultural and Environmental Systems Career pathway. The course is designed to assess cognitive, affective, and psychomotor learning and to do so in a student-centered and student-directed manner. The capstone requires the application of learning to a project that serves as an instrument of evaluation.

Pre-Requisite: Senior (Enrolled In Another Ag Class) Two Semesters: 2 Credits

Fee: \$25 FFA Dues

### **Supervised Agricultural Experience (SAE) Project**

Elective 10-12

Project required by all agricultural students.

Pre-Requisite: Another Ag Class Two Semesters: .25 Credit

Fee: Project Costs

NOTE: Communications & Leadership (C & L) and Business Management (B & M) are listed under the “Business” Section.

### **Agricultural Communications & Leadership**

Elective 10 - 12

Students will analyze attributes and capabilities of those in leadership positions and develop their communication and leadership skills in authentic situations. The course prepares students to apply journalistic, communication, and broadcasting principles to the development, production, and transmittal of agricultural and environmental systems information. Students will learn how to be proficient in computer software as it pertains to graphic designing, journalism, and oral communication. Learners are mandated to participate in the FFA organization, complete an SAE project(s), and continue to develop their leadership ability.

Pre-Requisite: Sophomore/Junior/Senior Two Semesters: 1 Credit

Fee: \$25 FFA Dues

### **Agricultural Business Management**

Elective 10 – 12

Learners will examine elements of business, identify organizational structures, and identify and apply management skills. Learners will develop business plans, financial reports, and strategic goals for new ventures or existing businesses. Learners will use marketing concepts to evaluate the marketing environment and develop a marketing plan with marketing channels, product approaches, promotion and pricing strategies. Learners will practice customer sales techniques and apply concepts of ethics and professionalism while understanding related business regulations. Students will learn how to be proficient in computer software as it pertains to accounting, record keeping, and salesmanship. Learners are mandated to participate in the FFA organization, complete an SAE project(s), and continue to develop their leadership ability.

Pre-Requisite: Sophomore/Junior/Senior Two Semesters: 1 Credit

Fee: \$25 FFA Dues

NOTE: Science & Technology of Food and Animal & Plant Biotechnology are listed under the “Science” Section.

### **Science & Technology Of Food (Ag Class)**

Elective 11 – 12

This class can serve as a “3rd science credit” for graduation requirements. Students will examine the research, marketing, processing, and packaging techniques applied to the development of food products. Learners will examine principles of food preservation techniques and determine correlations to food sensory, shelf life, and food stability. Learners will examine and develop food safety, sanitation, and quality assurance protocol. Government regulations and food legislation will be examined and the implications to food science and technology will be identified. Students will complete an Agri-Science Fair SAE, participate in the FFA organization, and continue to develop their leadership ability.

Pre-Requisite: Junior/Senior Two Semesters: 1 Credit

Fee: \$25 FFA Dues & \$20 Lab

### **Animal & Plant Biotechnology**

Elective 11 – 12

This class can serve as a “3rd science credit” for graduation requirements. Learners will apply principles of chemistry, microbiology, and genetics to plant and animal research and product development. They will describe the importance of biotechnology in society and analyze the issues that have affected agricultural biotechnology. Learners will apply genetic principles to determine genotypes and phenotypes. Learners will describe the parts and functions of animal and plant cells and their importance in biochemistry. Students will complete an Agri-Science Fair SAE, participate in the FFA organization, and continue to develop their leadership ability.

Pre-Requisite: Junior/Senior Two Semesters: 1 Credit

Fee: \$25 FFA Dues & Project Costs (TBD)