

Sample Agricultural Education Courses

Prepared by Agricultural Education Outreach

Basic Agricultural Science

Agricultural Explorations

Get started on a journey into the wide variety of agriculture! We study agriculture careers and job opportunities, agricultural foods, animals and plants, as well as conservation and wildlife management. The production of agriculture food products will also be investigated. (School A)

Applied Agriculture

Doing to learn is the purpose of this class! As a primarily hands-on course in agriculture, class projects include: raising and caring for animals, plant growth, agricultural safety and conservation. You will be able to take skills learned in this course and apply them to future goals. (School A)

Advanced & Specialized Agricultural Science

Courses may be offered as ½ or 1 credit options

Agricultural Business 1

Computers! Advertising and Marketing! In this course, you gain hands-on experience in the agricultural business world. Class projects include marketing an agricultural product, sales techniques and computer record keeping. This applied course also provides opportunities for individual and group projects. (School A)

Business Skills in Agriculture

Visit county agriculture businesses while learning about business management, computer applications and people management. In this class, students maintain a computer simulated agricultural business as well as work within a group to market, organize and manage a small agricultural enterprise. (School A)

Agricultural Entrepreneurship

This course is designed to simulate the independent study skills and learning styles that students need in college. The students are expected to create a business plan that involves research, design and an internship with a local business. (School C)

Agricultural Engineering I

This course offers a basic understanding of the skills needed by today's agricultural engineers and mechanics. Students learn basic skills in welding, small engines, plant science and agriculture equipment maintenance and design. Students utilize skills through "hands-on" applications where they design and build projects, fix machinery and learn safe machine shop management. Students also have the opportunity to participate in various field trips where they compete in career development events at colleges and fairs. (School B)

Agricultural Engineering II

Students learn mechanical science by studying the physics involved in the design and operation of agricultural equipment. Students use repair and maintenance manuals to properly maintain equipment and overhaul large engines. Students utilize skills through "hands-on" applications where they design and build projects, fix machinery and learn safe machine shop management. Students also have the opportunity to participate in various field trips where they compete in career development events at colleges and fairs. (School B)

Animal Science

This course emphasizes the study of animal reproduction, nutrition, health and management. Soil and plant science in relation to animal health is also stressed. Students learn how an animal's body works to utilize feeds and grow healthy. Field trips and career development events enable students to utilize "hands-on" skills and become future leaders in the field of animal science. (School B)

Aquaculture

Students research fish needs and engineer their own system for growing fish on a small scale. Fly tying and recreational fishing is also reviewed. (School B)

Communications and Marketing

This course focuses on public speaking, job interviewing and presentation skills. As part of this course, web page programming skills are covered, and the Agriculture Program web page is maintained.

www.potsdam.k12.ny.us/hs/sipher (School C)

Dairy Management

Students delve into various aspects of dairy production including: animal conformation, reproduction and health, nutrition and facilities planning. On-farm visits and guest speakers are used along with a farm simulation project. (School D)

Equine Management

Students gain knowledge in horse nutrition, equipment, breed characteristics, facility design and maintaining a healthy animal. (School D)

Environmental Science

This course is designed for students interested in conservation careers, environmental conservation, ecology and other environmentally related areas. Students are introduced to basic ecological systems of the environment and how humans affect the environment. Soil erosion and conservation is stressed, with students participating in Land Judging Career Developing Events and many other outdoor activities. Students learn to identify various species of wildlife and examine their habitats. An introduction to basic surveying is also taught. (Students in this course may receive science credit and have an opportunity to receive college credit from SUNY Morrisville!) (School B)

AP Environmental Science

This course provides students with the scientific principals, concepts and methodologies required to understand the interrelationships of the natural world. This project-centered course teaches students to identify and analyze environmental programs, evaluate the risks associated with these problems and examine alternative solutions to resolve or prevent them. (School A)

Floral Design I

This course covers spring flowers, designs and projects. Students learn basic floral design using fresh and silk flowers, as well as Valentines Day designs, Mother's Day designs and corsages. The course also focuses on identifying cut flowers and designing a cut flower garden to enjoy. As a final class project, students plan and design flowers for a mock wedding ceremony. (School A)

Floral Design II

This course covers dried flowers, designs and projects. Students learn basic floral design using fresh and silk flowers, as well as learning the techniques to construct designs with dried flowers. Class projects also include holiday designs and interior decorating ideas for Halloween and Thanksgiving projects, and Christmas wreath designs. (School A)

Food Production & Processing

Where does your food come from? What happens after harvest? In this very hands-on class, students discover food-processing techniques ranging from ice cream and yogurt to potato chips and cereal. The class experiments with issues of food safety and packaging, and explores career choices in the exciting world of food science. (School A)

Forestry

Students become familiar with the safety and proper use/upkeep of chainsaws. This course focuses on the application of forestry management principals in the school land lab. (School D)

Greenhouse Management

In this course students operate a working greenhouse business. Poinsettias are grown and sold at Christmas. Bedding plants are produced for spring sales while landscaping projects such as water gardens are designed and constructed. (School C)

Landscape Design and Maintenance

This course offers students an overview of this growing industry, providing instruction and activities in landscape design, installation and management. Students will have the opportunity to create their own landscape designs, construct a new landscaped area and provide seasonal maintenance on existing landscaped areas near the school.

Large Engines

Students learn principals of diesel and multi-cylinder gas engines. Troubleshooting and repair procedures are also practiced. Vehicle restoration is one example of a class project. (School D)

Mechanization, Systems, and Structures I & II

I – Basic systems are explored through applied activities in: electricity, power transmissions and concrete.
II – Systems analysis and theory in pneumatics, structures, hydraulics, irrigation and plumbing are covered.
(School D)

Natural Resource Management

Students learn about wildlife identification and habitats, tree identification, forest management, aquaculture, soil management, bird identification, land surveying and map reading. As part of the aquaculture unit, over 300 brook trout are raised and released. (School C)

Plant Science

Students explore the many aspects of horticulture and landscaping. A study of agronomy (soil science) is followed by an in-depth study of how plants grow and the environmental factors which effect plant growth. Hands-on lab work includes field trips, greenhouse work and the opportunity to participate in related career development events. This course is recommended for students interested in working with plants, both as ornamental and food enterprises. (School B)

Small Animal Care & Management

Laboratory animal and small animal care is expanding quickly, creating many career opportunities. The class projects include raising rabbits and other laboratory animals, aquaculture (fish farming) and health and productivity of animals. Explore animal rights and animal welfare issues with group projects and discussions. (School A)

Small Engine Repair

Students learn basic engine theory, and then apply that theory to engine tear down, reassembly and troubleshooting procedures. (School D)

Veterinary Science

In this course students learn about anatomy and physiology, clinical exams, laboratory procedures, parasite identification methods, veterinary terms and math, and many other aspects of the veterinary hospital. Students participate in hands-on laboratory activities that incorporate advanced science and math skills into the exciting field of veterinary science.

Welding and Metalworking

Students learn basic principals and safety used in arc welding, oxy-acetylene torch use, Mig welding, metal working skills and fabrication. (School D)

Advanced Welding and Metalworking

Aluminum and out of position welding basics are covered. Students participate in repair and fabrication projects. (Basic Welding is Prerequisite) (School D)

Advanced Student Leadership Development

Student leadership development is an integral part of occupational education instruction, which is enhanced by the FFA Association. Students participating in these student leadership organizations benefit from their major emphasis on development, through such activities as career development events, travel and self-improvement opportunities, of the skills and abilities necessary for leadership in the field of agriculture. Competitive events and projects on an individual, team and local chapter basis aid in accomplishment of the performance objectives of the respective institution. Student leadership organizations have proven to be very effective vehicles in infusing a student-centered community-based approach to occupational education. In addition, these organizations provide the school district with dynamic public relations programs.

Students who complete an acceptable program of Student Leadership Organization activities will have satisfied the social studies IV requirement of ½ unit of credit in Participation in Government.
(SED or AEO)

Cooperative Occupational Education in Agriculture

This program provides opportunities for students to learn and perform occupational skills on the job. These programs are designed to permit students to develop and demonstrate their skills at a supervised work site where the business and industrial community utilizes training plans developed cooperatively with students and school personnel. There is continuous feedback through a teacher-coordinator at the school to the school staff concerned with the student's performance. The coordinator of the cooperative program must be certified to teach in agricultural education. Students may earn ½ unit or 1 unit of credit.
(SED or AEO)

Agriculture Education-4 units

Introduction to Occupations (1 unit)
Basic Agricultural Science (1 unit)
Advanced Agricultural Science (1 unit)

Plus 1 unit from:

Specialized Agriculture Skills (1/2 unit or 1 unit)
Cooperative Occupational Education in Agriculture (1/2 unit or 1 unit)
Advanced Student Leadership Education (1/2 unit)
Biology (1 unit)
Occupational Related Science (1 unit)
State Approved Courses of Other Occupational Education Disciplines

Course or Program Title- For a 5-unit sequence, a unit of course/program may be combined with 4-units above.

Agriculture Education

Agriculture Production and science Occupations Cluster
Animal Science
Mechanical Science
Plant Science
Business Management
Agricultural Business management and Service Occupations Cluster
Animal Science
Mechanical Science
Plant Science
Business Management
Natural Resources and Ecological Occupations Cluster
Animal Science
Mechanical Science
Plant Science
Business Management

Sample course descriptions are from the following schools and agencies:

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