Middle School Agriculture Education Courses

Course Code	Course Title	Curriculum Code/Hours		
		VT	V3	VM
Agribusiness & Production Systems (A0)				
010105	Agriculture, Food, and Natural Resources	120-280	60	30-60
010125	Animal and Plant Science	120-280	60	30-60
011010	Science & Technology of Food	120-280	60	30-60
012010	Animal & Plant Biotechnology			30-60
990364	Career Connections			30-60
Industrial Power Technology (A1)				
010105	Agriculture, Food, and Natural Resources	120-280	60	30-60
010210	Ag & Industrial Power			30-60
990364	Career Connections			30-60
Animal Science and Management (A2)				
010105	Agriculture, Food, and Natural Resources	120-280	60	30-60
010910	Animal Science and Technology			30-60
990364	Career Connections			30-60
Agriculture, Food, and Natural Resources Bioscience (A3)				
010105	Agriculture, Food, and Natural Resources	120-280	60	30-60
012010	Animal & Plant Biotechnology	120-280	60	30-60
011010	Science & Technology of Food			30-60
990364	Career Connections			30-60
Horticulture (A5)				
010105	Agriculture, Food, and Natural Resources	120-280	60	30-60
010155	Plant and Horticultural Science			30-60
990364	Career Connections			30-60

Natural Resource Management (A6)				
010105	Agriculture, Food, and Natural Resources	120-280	60	30-60
010710	Natural Resources	120-280	60	30-60
990364	Career Connections			30-60

Curriculum Code	Grades	CT Funded	Assessment	Counts toward Concentrator
VT	7-12	Yes	Required	Yes
V3	7-12	Yes	Not required	No
VM	7-9	Yes	Not required	No

- Career-Technical Middle School Courses require schools to complete a CTE-26 and program of study*.
- Students enrolled in Career-Technical Middle School Courses (VT, VM) are eligible for participation in Career-technical Student Organizations (CTSO).
- Granting High School credit for Career-Technical Middle School Course high school courses is a local school district decision.
- VM Courses do not count towards four course minimum.

*If you have a 7-12 grade building with a current CTE26 on file, no additional CTE26 in required, unless you add a new program to that building IRN.

Agriculture, Food and Natural Resources

Subject Code: 010105

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 and begin development of their leadership ability.

Plant and Horticultural Science

Subject Code: 010155

This first course in the pathway focuses on the broad knowledge and skills required to research, develop, produce and market agricultural, horticultural, and native plants and plant products. 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. Projects and activities will enable students to develop communication, leadership, and business management skills.

Agricultural and Industrial Power

Subject Code: 010210

The A&I *Power Technology* 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.

Natural Resources

Subject Code: 010710

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. Students will be introduced to management practices related to managing air and water quality along with requirements for managing solid and liquid waste. Communications, business principles and leadership skill development are essential to the program.

Animal Science and Technology

Subject Code: 010910

Learners will develop business leadership, problem-solving and communication skills in relation to the science and technology of animals. 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.

Science and Technology of Food

Subject Code: 011010

This first course in the pathway examines 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.

Animal and Plant Biotechnology

Subject Code: 012010

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. Students will apply genetic principles to determine genotypes and phenotypes. Students will describe the parts and functions of animal and plant cells and their importance in biochemistry.

Career Connections

Subject Code: 990364

This course shows students how classroom learning translates into marketable skills. Through hands-on learning and local business involvement, students will engage in career-related experiences to acquire basic skills in various career fields. This provides students with tangible experiences to begin career decision making. Teachers have the flexibility to select career fields related to Ohio's in-demand jobs represented in the community.