



High School Course Guide



Agriculture,
Food &
Natural
Resources

Classes located at GHS, SGHS, RHS and SHS / Horticulture classes at NFHS/Veterinary at the GRCTC

8A410	Advanced Animal Science (R)	1 credit	Gr: 11-12
8A415	Advanced Animal Science (DC) 		

R. Prerequisite: Biology, IPC/Chemistry or Physics and a minimum of one credit from the courses in the AFNR cluster.

Description: (only at GHS, SGHS, RHS and SHS) this course examines the interrelatedness of human, scientific and technological dimensions of livestock production. Instruction is designed to allow for the application of scientific and technological aspects of animal science through field and laboratory experiences. **(Science Credit).**

8A418	Advanced Plant & Soil Science (R)	1 credit	Gr: 11-12
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Prerequisite: Prior completion of one credit AFNR course, or teacher recommendation; Biology, Chemistry/IPC or Physics are recommended.

Description: (only at NFHS) Plant and Soil Science provides a way of learning about the natural world. Students should know how plant and soil science has influenced a vast body of knowledge, that there are still applications to be discovered, and that plant and soil science is the basis for many other fields of science. Investigations, laboratory practices, and field exercises will be used to develop an understanding of current plant and soil science. This course is designed to prepare students for careers in the food and fiber industry. Students will learn, reinforce, apply, and transfer their knowledge in a variety of settings. **(Science Credit).**

8A307	Agriculture Equipment Design and Fabrication	1 credit	Gr: 11-12
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Prerequisite: None; Recommended prerequisite: Agricultural Mechanics and Metal Technologies.

Description: (only at GHS) In Agricultural Equipment Design and Fabrication, students will acquire knowledge and skills related to the design and fabrication of agricultural equipment. To prepare for careers in mechanized agriculture and technical systems, students must attain knowledge and skills related to agricultural equipment design and fabrication. To prepare for success, students reinforce, apply, and transfer their academic knowledge and technical skills in a variety of settings.

8A240	Advanced Floral Design	1 credit	Gr: 10-12
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Prerequisite: Floral Design

Description: (only at NFHS) Advanced Floral Design students build on the knowledge from Principles and Elements of Floral Design and Are introduced to more advanced floral design concepts, with an emphasis on specialty designs and specific occasion planning.

8A200	Agricultural Mechanics and Metal Technologies (R)	1 credit	Gr: 10-12
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Prerequisite: Principles of AFNR

Description: (only at GHS and SGHS) This course is designed to develop an understanding of agricultural mechanics as it relates to safety and skills in tool operation, electrical wiring, plumbing, carpentry, fencing, painting, concrete, and metal working techniques; specialty welding and cutting techniques; use of oxy-fuel equipment and electric arc welding equipment; cost effective construction techniques; and specialized non-metallic fabrication techniques. Basic terminology, mathematical computations, and application of scientific principles related to agricultural metal fabrication technology will be reinforced.

8A210	Agricultural Power Systems (R)	2 credits	Gr: 10-12
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Prerequisite: Recommended Principles of AFNR

Description: (only at GHS and SGHS) this course is designed to develop an understanding of power and control systems as related to energy sources, small and large power systems, and agricultural machinery. To be prepared for careers in agricultural power students should attain academic skills and knowledge; acquire technical knowledge and skills related to power, structural, and technical agricultural systems and the workplace; and develop knowledge and skills regarding careers, entry requirements, industry certifications, and industry expectations.

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8A360 Agricultural Structures Design and Fabrication (R)

1 credit

Gr: 11-12

Prerequisite: None; Recommended Prerequisite: Agricultural Mechanics and Metal Technologies

Description: (only at GHS and SGHS) to be prepared for careers in mechanized agriculture and technical systems, students attain knowledge and skills related to agricultural facilities design and fabrication. Students explore career opportunities, entry requirements, and industry expectations. To prepare for success, students reinforce, apply, and transfer their academic knowledge and technical skills in a variety of settings. Principles of facilities design and fabrication related to agricultural structures.

8A250 Energy and Natural Resources Technology (R)

1 credit

Gr: 10-12

Prerequisite: Recommended a minimum of 1 credit from AFNR Cluster

Description: (only at GHS, SGHS, RHS and SHS) this course is designed to explore the interdependency of the public and natural resource systems related to energy production. Renewable, sustainable, and environmentally friendly practices will be explored. To be prepared for careers in the field of energy and natural resource systems, students need to attain academic skills and technical knowledge and skills related to energy and natural resources and the workplace, and develop knowledge and skills regarding career opportunities, entry requirements, and industry expectations.

8A230 Equine Science (R)

0.5 credit

Gr: 10-12

Prerequisite: None

Description: (only at GHS, SGHS, RHS and SHS) Equine Science identifies and analyzes the equine industry, horse selection, anatomy and physiology, feeding and nutrition, general health, handling safety, care, breeding, equipment and facilities, and other management techniques. Course will include, but is not limited to horses, donkeys, and mules.

8A160 Floral Design

1 credit

Gr: 9-12

Prerequisites: None

Description: (only at NFHS) This course is designed to develop students' ability to identify and demonstrate the principles and techniques related to floral design as well as develop an understanding of the management of floral enterprises. Students will learn to design and arrange flowers, foliage, and related plant materials for interior locations. Students will learn the classification and identification of flowers and plants used in floral design, and have experiences with fresh cut flowers, silk and dry flowers, tropical foliage and blooming plants. Techniques such as keeping qualities, design principles, geometric floral designs, and preparation. Preparation for special events, holidays, special effects and interior landscaping. Safe work practices and proper handling techniques for dealing with floral design and interior landscape. Supplies and material fee may be required. **(Fine Arts Credit)**.

8A270 Greenhouse Operations and Production (R)

1 credit

Gr: 10-12

Prerequisite: None

Description: (only at NFHS) this technical course prepares students to produce greenhouse/nursery plants and to maintain plant growth and propagation. Students will learn plant propagation techniques and plant growing principles related to horticultural plant production. Safe work practices as well as proper maintenance and storage of tools, equipment, and environmental conditions will be addressed. Marketing techniques and the use and application of management records in horticultural plant production will be vital. Information regarding career and employment opportunities will be provided.

8A170 Horticultural Science (R)

1 credit

Gr: 9-12

Prerequisite: None

Description: (only at NFHS) this course offers students an introduction to horticulture sciences with emphasis on technical skills, entrepreneurship, and occupational opportunities. Students will identify and recognize maintenance and storage of tools and equipment used in horticultural science; study horticultural structures and equipment; recognize greenhouse environment and the growing of plants; explore plant propagation and growth; and gain an understanding of vegetable, fruit, and nut production. A survey of floral design and landscape establishment and maintenance is also included.

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8A130 Landscape Design and Management (R)

0.5 credit

Gr: 9-12

Prerequisite: None

Description: (only at NFHS) This technical course prepares students with basic landscape principles to design, construct, and maintain planted areas and devices for the beautification of home grounds and other areas of human habitation and recreation. Students will analyze landscape sites, prepare landscape plans, recognize and select plants and identify structures for use in landscape design and maintenance. Safety will be stressed in the use of tools and equipment for landscape installation and maintenance. Maintenance principles and accurate management records will be addressed. Information about career and employment opportunities will be provided.

8A220 Livestock Production (R)

1 credit

Gr: 10-12

Prerequisite: None

Description: (only at GHS, SGHS, RHS and SHS) To be prepared for careers in the field of animal science, students need to attain academic skills and knowledge, acquire knowledge and skills related to animal systems and the workplace, and develop knowledge and skills regarding career opportunities, entry requirements, and industry expectations. To prepare for success, students need opportunities to learn, reinforce, apply, and transfer their knowledge and skills in a variety of settings. Animal species to be addressed in this course may include, but are not limited to, beef cattle, dairy cattle, swine, sheep, goats, and poultry.

8A416 Mathematical Applications in Agricultural (R)

1 credit

Gr: 11-12

Prerequisite: Algebra I; Recommended Prerequisite: prior completion of one AFNR credit

Description: To be prepared for careers in agriculture, food, and natural resources, students must acquire technical knowledge in the discipline as well as apply academic skills in mathematics. Students should apply knowledge and skills related to mathematics, including algebra, geometry, and data analysis in the context of agriculture, food, and natural resources. To prepare for success, students are afforded opportunities to reinforce, apply, and transfer their knowledge and skills related to mathematics in a variety of contexts. **[Math credit.]**

8A340 Organic Sustainable Food Production (R)

1 credit

Gr: 11-12

Prerequisite: Recommended: one course in Agriculture, Food and Natural Resources.

Description: (only at NFHS) Organic Sustainable Food Production is designed to explore the history, industry, principles, and practices of organic sustainable food production. Students will research how food raised organically might benefit people and the environment, gain knowledge in the organic nutrition, passive solar greenhouses, organic certification requirements, composting, organic agricultural economics, and recycling.

8A320 Practicum in AFNR I (R)

2 credits

Gr: 11-12

Prerequisite: Recommended: one course in Agriculture, Food and Natural Resources.

Description: (GHS & SGHS only) the practicum course is a paid or unpaid capstone experience for students participating in a coherent sequence in the Agriculture, Food, and Natural Resources Career Cluster. Practicum in Agriculture, Food, and Natural Resources is designed to give students supervised practical application of knowledge and skills. Practicum experiences can occur in a variety of locations appropriate to the nature and level of experiences such as employment, independent study, internships, assistantships, mentorships, or laboratories. To prepare for careers in agriculture, food and natural resources, students must attain academic skills and knowledge, acquire technical knowledge and skills related to the workplace, and develop knowledge and skills regarding career opportunities, entry requirements, and industry expectations. To prepare for success, students need opportunities to learn, reinforce, apply, and transfer their knowledge and skills and technologies in a variety of settings.

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8A330 Practicum in AFNR I - Extended Practicum (R)

3 credits

Gr: 11-12

Prerequisite: 16 years of age. Recommended: one course in Agriculture, Food and Natural Resources.

Description: (GHS & SGHS only) The extended practicum course is a paid or unpaid capstone experience for students participating in a coherent sequence of career and technical education courses in the Agriculture, Food, and Natural Resources Career Cluster. Practicum in Agriculture, Food, and Natural Resources is designed to give students supervised practical application of knowledge and skills. Practicum experiences can occur in a variety of locations appropriate to the nature and level of experiences such as employment, independent study, internships, mentorships, or laboratories. Students must attain academic and technical skills and knowledge related to the workplace, career opportunities, entry requirements, and industry expectations.

8A400 Practicum in AFNR II (Lab)

2 credits

Gr: 12

Prerequisite: Practicum in Agriculture, Food and Natural Resources I.

Description: (GHS & SGHS only) the second year program consists of a more in-depth study of a combination of occupationally-related classroom instruction and on-the-job training.

8A300 Practicum in AFNRI - Horticulture (LAB)

2 credits

Gr.: 11-12

Prerequisite: One course in AFNR

Description: (only at NFHS) This pre-employment lab course prepares students to produce, process, and market horticulture plants used principally for ornamental, recreational, and aesthetic purposes and to establish, maintain, and manage horticultural enterprises. The course includes structures, machinery, and equipment necessary for each horticultural enterprise. Students will learn classification and identification of horticultural plants, floral designs, environmental requirements, propagation of plants and the growing of greenhouse plants, nursery production, landscaping and establishment and care of turfs. Experiences with the production of vegetables, fruits and nuts, control of soil and plant diseases, insects, and weeds will be provided. Opportunities and an understanding of greenhouse and nursery business management will be introduced.

8A303 Practicum in AFNR - Horticulture / Extended II (LAB) (R)

3 credits

Gr.: 12

Prerequisite: Practicum in AFNR I - (LAB)

Description: (only at NFHS) this second year lab course will offer students more intensive study and application of horticultural sciences and enterprises. Expanded experiences in the classification and identification of horticultural plants, floral designs, environmental requirements, use of media, propagation of plants and the growing of greenhouse plants, nursery production, landscaping and establishment and care of turfs will be included. Experiences with the production of vegetables, fruits and nuts, control of soil and plant diseases, insects, and weeds will be provided. The importance of the horticulture industry will be stressed. Structure and equipment requirements for horticulture production will be taught. Career and employment opportunities and an understanding of greenhouse and nursery business management will be examined in depth.

8A950 Practicum in AFNR - Veterinary Technician Laboratory

2 credits

Gr: 11-12



Prerequisite: Veterinary Medical Applications

Description: The practicum course is a paid or unpaid capstone experience for students participating in a coherent sequence of career and technical education courses in the Agriculture, Food, and Natural Resources Career Cluster. Practicum experiences can occur in a variety of locations appropriate to the nature and level of experiences such as employment, independent study, internships, assistantships, mentorships, or laboratories. Student must complete interest form. Course requirements must be met.

8A953 Practicum in AFNR - Veterinary Technician / Extended Practicum

3 Credits

Gr: 11-12



Prerequisite: Veterinary Medical Applications. This course is an Extension of the Practicum, and taken concurrently.

Description: Designed to give students supervised practical application of knowledge and skills. Experiences such as employment, independent study, internships, assistantships, mentorships, or laboratories. Course requirement must be met.

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8A100 Principles of Agriculture, Food, and Natural Resources (R) 1 credit Gr: 9-12

Prerequisite: None

Description: (only at GHS, SGHS, RHS and SHS) This principles class is a comprehensive course covering the broad field of agriculture including career planning and expectations, agricultural industry and its global importance, agriculture leadership organizations (FFA), agriculture research, food and fiber production, animal and plant science, environmental science, basic mechanical skills, and personal and communication skills.

8A234 Professional Standards in Agribusiness (R) 0.5 credit Gr: 10-12

Prerequisite: None

Description: (only at GHS and SGHS) Professional Standards in Agribusiness is designed to develop agricultural leadership, citizenship, and cooperation. It includes topics in personal development, employee-employer relations, problem solving, group and interpersonal communication skills, safety, entrepreneurship, record keeping, and career opportunities.

8A110 Small Animal Management (R) 0.5 credit Gr: 9-12

Prerequisite: None

Description: (only at GHS, SGHS, RHS and SHS) to be prepared for careers in the field of small animal management, students need to acquire knowledge and skills related to animal systems, career opportunities, entry requirements, and industry expectations. Students will learn, reinforce, apply, and transfer knowledge and skills in a variety of settings. Suggested small animals which may be included in the course of study include, but are not limited to, small mammals, amphibians, reptiles, avian, dogs, and cats.

8A140 Turf Grass Management (R) 0.5 credit Gr: 9-12

Prerequisite: None

Description: (only at NFHS) Turf Grass Management is designed to develop an understanding of turf grass management techniques and practices. The student identifies and implements common cultural and physiological requirements for cool and warm season turf grass maintenance, performs turf grass management business procedures, and manages turf grass maintenance equipment.

8A940 Veterinary Medical Applications / Ag Laboratory Field Experience (R) 2 credit Gr: 11-12


Prerequisite: Small Animal Management, or Equine Science, or Livestock Production

Description: This course provides training in the veterinary assistant field. The course includes, but is not limited to, animal handling and restraint, health and safety, sanitation, surgical preparation, anatomy, physiology, medical terminology, infectious diseases, instrument and equipment identification, vaccine preparation and injection techniques, laws and ethics, communication skills and veterinary office procedures such as following directions, the practice of basic math skills as applied to a medical setting and reading to gain information to perform assignments and tasks as directed. Students are also given the opportunity to develop leadership skills through the FFA organization. Student must complete interest form. Course requirements must be met.

8A120A Wildlife, Fisheries & Ecology Management (R) 1 credit Gr: 9-12

Prerequisite: None

Description: (only at GHS, SGHS, RHS and SHS) this course examines the management of game and non-game wildlife species, fish, and aqua crops and their ecological needs as related to current agricultural practices. Students will have an opportunity to examine the importance of wildlife and outdoor recreation with emphasis on using wildlife and natural resources. Students will discuss administrative policies, laws related to wildlife and fish management; and identify basic ecological concepts.

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