



## **Directory of Institutes/Programs and Courses**

Locust Trace AgriScience Center  
3591 Leestown Road, Lexington, Kentucky 40511  
859-422-3990

<https://www.fcps.net/LocustTrace>

Each student will choose an institute/program, complete course work, then become post-secondary ready. To become post-secondary ready, students shall successfully complete two Career and Technical Education dual credit courses (earning a grade of C or better in each), earn a passing score on an End of Program assessment, earn a passing score on an industry certification assessment, or successfully complete a TRACK apprenticeship or 300 hours in a paid or unpaid internship.

To develop holistic knowledge of agriculture, students will complete four courses per year, including Agriculture Employability Skills, Agriculture Communications, and classes from other institutes/programs. Students will participate in Work-Based Learning opportunities through our partnerships with community agencies and local businesses, such as The Kentucky Castle. These opportunities include cooperative learning placements, internships, and TRACK apprenticeships.

Students may complete core content area classes to meet graduation requirements, as well, including the following:

- Health and Physical Education (*fulfills graduation requirement*)
- Spanish 1, Spanish 2, and/or Advanced Spanish 3 (*fulfills elective credits*)
- Advanced Government, Advanced United States History, and/or Advanced World History (*fulfills social studies credits*)
- Advanced Humanities and Visual and Performing Arts (*fulfills graduation requirement*)



Agricultural Engineer  
Agricultural Equipment Inspector  
Carpenter  
Concrete Finisher  
Contractor  
Electrician  
Farm or Industrial Maintenance Worker  
Large Equipment Technician  
Parts Salesperson  
Small Equipment Technician  
Welder



In the Agricultural Engineering Institute, students learn a variety of skills utilized in the agriculture industry, including small engine mechanics; farm maintenance; equipment operation, repair, and restoration; carpentry and construction; and welding.







**Agribusiness Marketing Specialist**  
**Equine Industry Lawyer**  
**Equine Economist**  
**Equine Pedigree Analyst**  
**Equine Therapist**  
**Extension Horse Specialist**  
**Farrier**  
**Feed Sales Representative**  
**Horse Farm Manager**  
**Horse Groomer**  
**Horse Trainer**  
**Mounted Police Officer**



In the Animal Science Institute: Agribusiness Systems – Equine Studies Program, students learn about the equine industry and related businesses. Students develop knowledge and skills related to the handling, grooming, and barn care of horses in addition to farm management.







In the Animal Science Institute: Food Science and Processing Systems Program students learn about the growth and production of plants and animals as a food source. Topics include nutritional needs; food preparation; consumption trends; and production, processing, and transporting of animal products.



Development Chef  
Dietician  
Food and Drug Inspector  
Food Product Developer  
Food Scientist  
Geneticist  
Meat Scientist  
Nutritionist  
Processing Plant Technician  
Quality Control Specialist







Animal Boarding and Care Manager  
Laboratory Technician  
Pharmaceutical Sales Representative  
Research Technician  
Veterinarian  
Veterinary Assistant  
Veterinary Nurse  
Zoologist



In the Animal Science Institute: Animal Science Systems Pre-Veterinary Studies Program students learn to work with small animals in a clinical setting. Students learn how to board, groom, and train small animals and pursue careers related to veterinary science.





Air Quality Specialist  
 Arborist  
 Conservation Officer  
 Environmental Scientist  
 Environmental Technician  
 Fish and Game Warden  
 Forest Technician  
 Park Ranger  
 Range Manager  
 Wildlife Manager



In the Environmental Science and  
 Natural Resources Institute,  
 students learn to manage and  
 conserve natural resources,  
 including forests, woodlands,  
 wetlands, and wildlife. Students  
 learn how environmental science  
 and a variety of ecosystems relate  
 to agriculture.







In the Plant Science Institute, students learn about the growth of all types of plants, both edible and decorative. Edible plant topics include nutritional needs; food preparation; consumption trends; and production, processing, and transporting of plants. Decorative plant topics include floral design (using silk, dried, and fresh flowers), landscaping, and sports turf management.



Agriculture Inspector  
Agronomist  
Athletic Turf Manager  
Biotechnologist  
Crop Advisor  
Floral Designer  
Golf Course Superintendent  
Greenhouse Manager  
Horticulturist  
Landscape Architect  
Soil Scientist





## Career and Technical Education – Agriculture Courses

**Agribusiness and Farm Management** – learn how to manage a farm or agribusiness, including managing production and inventory, equipment, and credit and taxes; practicing market analysis; and developing a business plan (especially related to the equine industry)

**Agriculture Communications** – learn how to utilize various styles of communication important to agribusiness, including oral, written, and electronic communications

**Agriculture Construction Skills** – learn to construct and maintain agricultural structures and equipment using basic skills including tool identification, creation and interpretation of plans, materials calculation, electrification, carpentry, welding, metal fabrication, plumbing, and masonry

**Agriculture Employability Skills** – learn skills related to job searching, preparing resumes, writing letters of application, job interviewing, communicating effectively, human relations, and accepting responsibilities

**Agriculture Power and Machinery Operation** – learn agricultural machinery assembly, operation, maintenance, service repair, and safety

**Agriculture Sales and Marketing** – learn about competition in the agriculture marketplace, marketing decisions, types of markets, contracting, government programs and regulations, and promotion strategies (especially related to the equine industry)

**Agriculture Structures and Designs** – learn to design, evaluate, and interpret construction plans; calculate materials costs; and design, construct, and evaluate agricultural structures

**AgriScience** – learn about agricultural education and institute and program options; learn and implement the scientific method; complete an agriscience fair project; and compete in a local agriscience fair

**Animal Science** – learn basic knowledge and skills pertaining to animal identification, selection, nutrition, reproduction and genetics, and health management and marketing of farm and companion animals

**Animal Technology** – learn advanced production practices and current biotechnological application of farm animals and complete laboratory experience related to pre-veterinary studies

**Aquaculture** – learn the fundamentals of aquatic plant and animal biology, anatomy, morphology, and physiology in aquaculture and the unique properties of water for aquaculture

**Emerging Agricultural Technology** – learn about automation and advancement in agriculture, including precision techniques, artificial intelligence, robotics, drones, etc.

**Environmental Science and Technology** – participate in an intermediate scientific study of environmental technology by learning about environmental concerns related to air, water, soil, land use management, and waste management and their interrelationship with the biological ecosystem

**Equine Science** – learn about breed identification and selection, anatomy, physiology, nutrition, genetics and reproductive management, training principles, grooming, health, disease, parasite control, and sanitation practices of horses

**Floriculture and Floral Design** – learn floral design techniques using silk, dried, and fresh flowers; operation and management techniques of a floral business; and identification, production, and cultural management practices of plants used in floral design and interior landscaping

**Food Processing, Distribution, and Marketing** – learn about the production of food products from farm level to the consumer with emphasis on distribution and marketing to a global society and marketing and advertising of processed animal and plant products

**Food Science and Technology** – learn about the issues of food production, nutrition, food chemistry, and the development of animal and plant food products in a global society, especially related to government regulations

**Forestry/Wildlife Resources** – learn about the science of silviculture, including tree identification, tree production, forestry management, timber harvesting, wood utilization, and the environmental and ecological aspects of forestry; learn about wildlife industry resources, including ecology and ecosystems, wildlife habitats, population dynamics, management techniques, and government regulations

**Greenhouse Technology** – learn about greenhouse structures; environmental regulations; plant growth, development, and propagation; production and maintenance of bedding and container-produced plants; and marketing of horticulture products

**Introduction to Greenhouse and Crop Production** – develop basic scientific knowledge and skills related to management of soil and its effect on human and animal food and fiber production, the environment, and meeting basic needs of life and learn about plant anatomy, reproduction, growth, and health and current biotechnological advances

**Landscape and Turf Management** – learn about identification of landscape plants and their characteristics; site evaluation; site design; calculation of materials; costs for bidding; installing landscape plans; and plant maintenance and selection, culture, and management of turf species used for lawns, golf courses, athletic fields, and erosion control

**Nursery and Orchard Technology** – learn about production practices for container and field-grown nursery stock; identification, function, growing requirements, hardiness, and problems of landscape plant materials; propagating and growing evergreens and deciduous plants; and the operation of centers and nurseries



**Principles of Agricultural Science and Technology** – learn the foundations of various segments of the agricultural industry, including career opportunities and the history and processes of FFA and Jr. MANRRS organizations

**Small Animal Technology** – learn about management practices and marketing strategies in small and specialty animal technology, specifically focusing on identification, anatomy, physiology, nutrition, health, selection, and care of small animals

**Small Power and Equipment** – develop skills in maintenance, repair, and operation of equipment, small combustion-type engines, and electric motors

**Veterinary Science** – learn about safety, sanitation, anatomy and physiology, clinical exams, hospital procedures, parasitology, posology, laboratory techniques, nutrition, disease, office management, and animal management