



Directory of Institutes/Programs and Courses

Locust Trace AgriScience Center
3591 Leestown Road, Lexington, Kentucky 40511

859-422-3990

<https://locusttrace.fcps.net/>

Each student will choose an Institute/Program, complete course work, then become post-secondary ready. To become post-secondary ready, students shall successfully complete at least one Career and Technical Education (CTE) dual credit course (earning a grade of C or better), earn a passing score on a CTE End-of-Program assessment, earn a passing score on an industry certification assessment, or successfully complete 300 hours or more of Work-Based Learning.

To develop holistic knowledge of agriculture, students will complete four courses per year. Students will participate in Work-Based Learning opportunities through our partnerships with community agencies and local businesses. 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 Engineering Institute

1st Year

- Principles of Agricultural Science and Technology
- AgriScience
- Small Power and Equipment (Level 1)

2nd Year

- Agriculture Power and Machinery Operation (Level 2)
- Emerging Agricultural Technology (optional)
- Optional Dual Credit Classes

3rd Year

- Agriculture Construction Skills (Level 3a)
- Agriculture Structures and Designs (Level 3b)
- Optional Dual Credit Classes

4th Year

- Optional Dual Credit Classes
- Optional Work-Based Learning





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.



Animal Science Institute:
Agribusiness - Equine Studies Program

1st Year

- Principles of Agricultural Science and Technology
- AgriScience
- Equine Science (Level 1)

2nd Year

- Agribusiness and Farm Management (Level 2)
- Optional Dual Credit Classes

3rd Year

- Agriculture Sales and Marketing (Level 3)
- Optional Dual Credit Classes

4th Year

- Optional Dual Credit Classes
- Optional Work-Based Learning





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 - 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.



**Animal Science Institute:
*Food Science and Processing Program***

1st Year

- Principles of Agricultural Science and Technology
- AgriScience
- Food Science and Technology (Level 1)

2nd Year

- Animal Science (Level 2)
- Optional Dual Credit Classes

3rd Year

- Food Processing, Distribution, and Marketing (Level 3)
- Optional Dual Credit Classes

4th Year

- Optional Dual Credit Classes
- Optional Work-Based Learning





In the Animal Science Institute: Food Science and Processing 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 Science Institute:
*Pre-Veterinary Studies Program***

1st Year

- Principles of Agricultural Science and Technology
- AgriScience
- Veterinary Science (Level 1)

2nd Year

- Animal Science
- Small Animal Technology (Level 2)

3rd Year

- Animal Technology (Level 3)
- Optional Dual Credit Classes

4th Year

- Optional Dual Credit Classes
- Optional Work-Based Learning

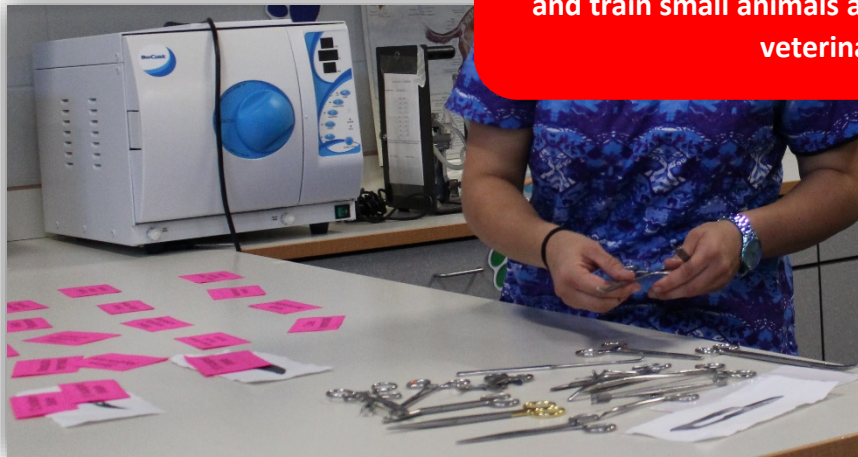




Animal Boarding and Care Manager
Laboratory Technician
Pharmaceutical Sales Representative
Research Technician
Veterinarian
Veterinary Assistant
Veterinary Nurse
Zoologist



In the Animal Science Institute: 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.



Environmental Science and Natural Resources Institute

1st Year

- Principles of Agricultural Science and Technology
- AgriScience
- Environmental Science and Technology (Level 1)

2nd Year

- Aquaculture (Level 2)

3rd Year

- Forestry/Wildlife Resources (Level 3)
- Optional Dual Credit Classes

4th Year

- Optional Dual Credit Classes
- Optional Work-Based Learning





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.



Plant Science Institute

1st Year

- Principles of Agricultural Science and Technology
- AgriScience
- Floriculture and Floral Design (Level 1)

2nd Year

- Introduction to Greenhouse and Crop Production (Level 2)

3rd Year

- Greenhouse Technology (Level 3)
- Optional Dual Credit Classes

4th Year

- Optional Dual Credit Classes
- Optional Work-Based Learning





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



CTE Agriculture Course Descriptions

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 digital 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