Agricultural Education and Communication

With a focus on disseminating scientific knowledge, agricultural education and communication professionals empower communities to gain a balanced understanding of food systems, natural resources, and related sciences. Agricultural Education and Communication students supplement core technical agriculture courses with teaching, leadership, or media experiences.

aec.ifas.ufl.edu

UF IFAS CALS UNIVERSITY of FLORIDA

COLLEGE OF AGRICULTURAL AND LIFE SCIENCES
SPECIALIZATIONS

- Agricultural Education
- Communication and Leadership Development

CAREERS

- Agriscience Teacher
- Communications Strategist
- Extension Agent
- Lawyer
- Lobbyist
- Marketer
- Sales Representative
- Science Writer
- Video Producer

DID YOU KNOW?

- Related Minors: Agricultural Communication, Extension Education, Leadership, Agricultural Curriculum and Development
- Student Organizations: Agricultural Communicators and Leaders of Tomorrow, Gator Collegiate FFA Alumni, Collegiate Farm Bureau
- Study abroad in Panama, Trinidad, and Spain
- State-of-the-art Mac Lab and video equipment available for student use
- Internship opportunities prepare students to earn Florida teacher certification

Offered at both the Gainesville and Plant City locations.
Agricultural Operations Management combines hands-on applied coursework and core business principles with emerging technologies and sustainable methods. Students gain experience in systems management, environmental quality, energy efficiency, agricultural machinery, GIS/GPS technology, remote sensing, irrigation, power systems, water control, and precision agriculture.
• Commercial Construction Manager
• Farm or Ranch Manager
• Heavy Equipment Sales and Management

• Irrigation Specialist
• Landscape Manager
• Precision Ag Specialist
• Production Manager
• Sales Representative

DID YOU KNOW?

• Related Minors: Packaging Science and Precision Agriculture
• Student Organization: Agricultural Operations Management Club
• Study abroad in Germany
• Hands-on lab experiences in irrigation, electricity, plumbing, machinery, concrete, and construction prepare students for a wide variety of professional opportunities
Animal Sciences graduates work with the science and business of producing domestic livestock species or animal-related products. They may also pursue veterinary studies for future work with companion animals, livestock, or other species. Animal Sciences students study biotechnology, reproduction, genetics, nutrition, physiology, growth, behavior, management, and food processing.

animal.ufl.edu

COLLEGE OF AGRICULTURAL AND LIFE SCIENCES
CAREERS

• Animal Health Researcher
• Animal Nutritionist
• Animal Technician
• Animal Welfare Specialist
• Doctor, Veterinarian, Pharmacist or Dentist
• Extension Agent
• Food Safety Inspector
• Herd Manager
• Meat Scientist
• Reproduction Specialist
• Sales Representative

DID YOU KNOW?

• Student Organizations: Block and Bridle, Gator Collegiate Cattlewomen, Dairy Science Club, Pre-Veterinary Medicine Club, Minority Pre-Veterinary Students Club, Equestrian Club, People for Animal Wellness
• Students gain hands-on experience through instruction at beef cattle, dairy cattle, horse, and swine facilities
• More than $40,000 in undergraduate scholarships are awarded annually by the department
• Students gain decision-making and critical thinking skills and travel across the United States through participation on horse, dairy, livestock, and meat judging teams

SPECIALIZATIONS

• Animal Biology*
• Equine
• Food Animal

*Satisfies academic requirements for professional school programs in medicine, dentistry, veterinary medicine, pharmacy and other health-related programs
Biological engineers apply principles of the life sciences to produce biofuels, food, feed, fiber, and other agricultural products from renewable bio-resources. They also protect the environment through conserving and replenishing our natural resources. **Biological Engineering** students study hydrodynamics, soil mechanics, thermodynamics, chemistry, biology, calculus, and more.
SPECIALIZATIONS

• Agricultural Production Engineering
• Biosystems Engineering
• Land and Water Resources Engineering
• Packaging Engineering

CAREERS

• Manufacturing Engineer
• Packaging Engineer
• Process Design Engineer
• Process Safety Engineer
• Project Engineer

• Quality Control Engineer
• Research and Development Engineer
• Technical Services Engineer
• Technical Manager

DID YOU KNOW?

• Related Minors: Packaging Science, Precision Agriculture
• Student Organizations: American Society of Agricultural and Biological Engineers (ASABE), Packaging Science Club
• Study abroad in Germany
• Students participate in national competitions such as fountain wars, robotics team and quarter-scale tractor
• One of only two engineering-based packaging engineering programs in the nation
• Accredited by the Engineering Accreditation Commission of ABET
• The Biological Engineering major is a Herbert Wertheim College of Engineering program housed within the UF/IFAS Agricultural and Biological Engineering Department; while technically engineering students, you can enjoy the benefits of both colleges!
Biology

This program provides a broad, general overview of the structure, function, growth, origin, evolution, and distribution of living organisms. Biology students take courses in biology, chemistry, physics, calculus, and statistics. The major is flexible and combines the faculty and resources of two UF colleges to prepare students for career success.

cals.ufl.edu/biology
SPECIALIZATIONS

- Applied Biology
- Biotechnology
- Natural Science
- Pre-professional*

*Satisfies academic requirements for professional school programs in medicine, dentistry, veterinary medicine, pharmacy and other health-related programs

CAREERS

- Bioinformatics Assistant
- Biological or Laboratory Technician
- Conservation Scientist
- Doctor, Veterinarian, Pharmacist or Dentist
- Epidemiologist
- Field Biologist
- Medical Scribe
- Quality Assurance Specialist

DID YOU KNOW?

- Related Minors: Bioinformatics
- Student Organizations: Pre-Veterinary Medicine Club, Minority Pre-Veterinary Students Club
- Through CALS, Biology students have two dedicated academic advisors
- Many Biology students elect to further their education through professional or graduate school
- This major is shared between two UF colleges, the core of the major is the same with Biology in CALS focusing on communication skills in addition to science
Botany

This program provides a broad background in the biology of plants, from the molecular to the whole-plant level. Botany students study anatomy, biochemistry, ecology, genetics, physiology, taxonomy, and molecular biology of plants. This flexible major combines the faculty and resources of two UF colleges to prepare students for career success.

botany.biology.ufl.edu

UF IFAS CALS UNIVERSITY of FLORIDA

COLLEGE OF AGRICULTURAL AND LIFE SCIENCES
SPECIALIZATIONS

- General Botany
- Botanical Research

CAREERS

- Arborist
- Biophysicist
- Botanist
- Ecologist
- Museum Curator
- Plant Breeder
- Plant Technician
- Research Scientist
- Taxonomist

DID YOU KNOW?

- Student Organization: Gators Reaching Out with Botany
- Botany provides a broad background in biodiversity and plant biology
- This major is shared between two UF colleges, the core of the major is the same with Botany in CALS focusing on communication skills in addition to science
Dietetics

This program applies the science of food and nutrition to the health and well-being of individuals and groups. **Dietetics** students study chemistry, biology, microbiology, nutrition, communication, food science, and management. They are well-prepared for dietetic internships or graduate study.

fshn.ifas.ufl.edu
CAREERS

• Clinical Dietitian/Nutritionist
• Corporate Wellness Specialist
• Eating Disorders Specialist
• Food Bank Nutrition Director
• Food Service Director
• Kitchen Design Consultant
• Nutrition/Health Educator
• Public Policy Consultant
• Sports Nutritionist

DID YOU KNOW?

• Related Minors: Food Science, Nutritional Sciences
• Student Organizations: Food Science and Human Nutrition Club, The Campus Kitchens Project
• Study abroad in France, Greece and Italy
• Success rates at UF on the Registered Dietitian exam far exceed the national average
Entomology and Nematology

This biological science includes the study of insects, mites, ticks, spiders and nematodes. These creatures can have both helpful and harmful effects on our food, environment, and health. Entomology and Nematology students study ecology, medically significant arthropods, social insects, insect management, physiology, behavior, evolution, natural ecosystem cycles and systematics.

entnemdept.ufl.edu

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UNIVERSITY of FLORIDA

COLLEGE OF AGRICULTURAL AND LIFE SCIENCES
**SPECIALIZATIONS**

- Biological Science of Insects
- Pre-professional*
- Urban Pest Management

*Satisfies academic requirements for professional school programs in medicine, dentistry, veterinary medicine, pharmacy and other health-related programs

**CAREERS**

- Apiculturist
- Biosecurity Program Manager
- Customs and Border Protection Agriculture Specialist
- Doctor, Veterinarian, Pharmacist or Dentist
- Ecotourism Manager
- Extension Agent
- Pest Control Specialist
- Public Health Specialist
- Research Entomologist

**DID YOU KNOW?**

- Related Minor: Entomology and Nematology
- Student Organizations: Entomology Club, Urban Entomological Society
- Study abroad in Brazil, Italy, and Honduras
- #1 Entomology Department in the world (2017 Center for World University Rankings)
- Student members of the Entomology Club develop skills in science communication through work with the club’s Arthropod Petting Zoo
Using an interdisciplinary approach, students in this major develop the scientific and technical foundation needed to integrate and communicate the diverse environmental issues associated with urban, agricultural, and natural ecosystems. Environmental Management students study hydrology, soil science, pest management, water resources, ecology and natural resource policy.
CAREERS

• Energy Resource Manager
• Environmental Consultant
• Environmental Lawyer
• Erosion Control Specialist
• Extension Agent
• Hydrologist
• Resource Conservationist
• Restoration Ecologist
• Water Resource Manager

DID YOU KNOW?

• Related Minors: Soil and Water Sciences, Environmental Science
• Student Organization: Wetlands Club
• Graduates find jobs with agricultural producers, consulting companies and government agencies involved in maintaining a sustainable environment

Offered at the Gainesville location and through UF Online.
Environmental Science

Environmental science is the study of people’s role in our natural systems. Using an interdisciplinary approach, the Environmental Science program approaches complex environmental issues across multiple perspectives. Environmental Science students study ecology, soil and water sciences, and natural resource management as well as environmental ethics, economics, policy and law.
CAREERS

- Conservation Scientist
- Ecologist
- Environmental Consultant
- Environmental Educator
- Environmental Lawyer
- Environmental Policy Analyst
- Patent Attorney
- Project Manager
- Sustainability Coordinator

DID YOU KNOW?

- Related Minor: Environmental Science
- Student Organization: School of Natural Resources and Environment Council, School of Natural Resources and Environment Liaisons
- Students can choose to pursue a Bachelor of Arts or a Bachelor of Science degree
- Environmental Science brings together professors and programs throughout the entire university
This social science major prepares students to address predictable human developmental changes, unpredictable events such as natural disasters, and persistent problems such as poverty and nutrition. Family, Youth and Community Sciences students study sociology, psychology, and economics as well as advanced topics in youth, family, and community development.

fycs.ifas.ufl.edu
CAREERS

- Domestic Violence Specialist
- Family Lawyer
- Family Life Educator
- Financial Literacy Counselor
- Fundraiser
- Health Educator
- Non-profit Manager
- Social Worker
- Volunteer Coordinator
- Youth Programs Specialist

DID YOU KNOW?

- Related Minors: Family, Youth and Community Sciences; International Development and Humanitarian Assistance; Nonprofit Organizational Leadership
- Student Organizations: Family, Youth and Community Sciences Club; Florida Collegiate 4-H
- Study abroad in Germany, India, Nepal, Greece, and Ireland
- All students complete a practical work experience, helping them be competitive in the job market after graduation
Food and Resource Economics

Through curriculum and experiential learning, students develop the skills to analyze complex situations such as the allocation of natural resources to meet the needs of people in local, state, national, and global communities. **Food and Resource Economics** students study sales, finance, marketing, management, environmental policy, law, international trade, math and economics.

fred.ifas.ufl.edu
SPECIALIZATIONS

- Food and Agribusiness Marketing and Management
  - International Food and Resource Economics

CAREERS

- Account Manager
- Credit Analyst
- Entrepreneur
- Lawyer
- Loan Officer
- Policy Adviser
- Pricing Strategy Analyst
- Production Supervisor
- Supply Chain Manager

DID YOU KNOW?

- Related Minors: Agricultural and Natural Resource Law, Food and Resource Economics, Management and Sales in Agribusiness
- Student Organizations: Agricultural Economics Club, Collegiate Farm Bureau
- Students compete in the National Agri-Marketing Association Student Marketing Competition and Agricultural and Applied Economics Association Academic Bowl Competition

Offered at both the Gainesville and Plant City locations.
Food Science

This major uses engineering, biological, and physical sciences to study the nature of foods, the causes of food deterioration, the principles underlying food processing, and the development and improvement of foods for consumption. **Food Science** students study organic and food chemistry, biology, physics, government regulations in the food industry, food engineering, and microbiology.

fshn.ifas.ufl.edu

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UNIVERSITY of FLORIDA

COLLEGE OF AGRICULTURAL AND LIFE SCIENCES
CAREERS

• Brewer
• Flavor Chemist
• Food Biotechnologist
• Food Safety Inspector
• Processing Plant Manager
• Product Development Director
• Public Health Analyst
• Regulatory and Compliance Manager
• Sales Manager
• Sensory Analyst
• Quality Control Manager

DID YOU KNOW?

• Related Minors: Food Science, Nutritional Sciences
• Student Organization: Food Science and Human Nutrition Club, The Campus Kitchens Project
• Study abroad in France, Greece and Italy
• Student leaders work closely with the Institute of Food Technologists
• State-of-the-art facilities include a commercial grade test kitchen, sensory analysis panel, and product development pilot plant
Forest Resources and Conservation

Providing students with a solid understanding of ecology, this major prepares students to manage and develop forest areas for economic, recreational, and ecological purposes. **Forest Resources and Conservation** students study natural resource management and analysis, soil and water sciences, plant identification, law and policy, fire management, and natural resource economics.

ffgs.ifas.ufl.edu
CAREERS

• Environmental Attorney
• Environmental Consultant
• Forest Resource Manager
• Forest Restoration Specialist
• Hydrologist
• Park Service Specialist
• Recreation Specialist
• Urban Forester

DID YOU KNOW?

• Related Minors: Forest Resources and Conservation
• Student Organizations: Forestry Club, Society of American Foresters
• This is the only nationally accredited four-year forest resources program in Florida
• The 2,080-acre Austin Cary Forest provides students with an outdoor laboratory for forest resource education, demonstration, and research

SPECIALIZATIONS

• Environmental Pre-Law*
• Forest Business Management*
• Forest Resource Management*
• Protected Areas Management*
• Recreation Resources Management*
• Urban Forestry*
• Watershed Science and Management

*Society of American Foresters accredited
The geomatics profession collects, manages, and analyzes geospatial data through ground surveying, photogrammetry, remote sensing, satellite positioning, inertial measurements, echo-sounding, and laser scanning. **Geomatics** students study geometry, statistics, boundary law, and surveying and mapping instrument usage.

ffgs.ifas.ufl.edu

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UNIVERSITY OF FLORIDA

COLLEGE OF AGRICULTURAL AND LIFE SCIENCES
SPECIALIZATIONS

- Geospatial Analysis
- Surveying and Mapping

CAREERS

- Cartographer
- Digital Mapping Specialist
- Entrepreneur
- Geographic Information Systems (GIS) Analyst
- Geospatial Intelligence Analyst
- Land Information Consultant
- Land Surveyor
- Photogrammetric Mapper
- Unmanned Aerial Vehicle (UAV) Operator

DID YOU KNOW?

- Related Certificates: Geomatics, Mapping with Small Unmanned Aerial Systems
- Student Organization: Geomatics Student Association
- Florida’s largest and longest running 4-year ABET-accredited degree program in Geomatics
- Students are active participants in making observations and taking and analyzing measurements using the latest technology, including drones and infrared cameras

Offered at the Gainesville, Fort Lauderdale and Plant City locations.

cals.ufl.edu | cals-dean@ufl.edu | 352-392-1963 | @ufcals
Horticultural Science

Horticultural Science graduates have a foundation of knowledge in the science behind fruit and vegetable production, including commodity production, cropping systems, basic plant science, and molecular biology. Horticultural Science students study genetics, crop nutrition, plant physiology, chemistry, physics, entomology and nematology, and soil and water sciences.

hos.ufl.edu
SPECIALIZATIONS

- Horticultural Production
- Horticultural Science
- Organic Crop Production
- Plant Molecular and Cellular Biology

CAREERS

- Greenhouse Manager
- Field Agronomist
- Organic Program Manager
- Plant Geneticist
- Postharvest Physiologist
- Research Scientist
- Sales Representative
- Viticulturist
- Weed Scientist

DID YOU KNOW?

- Related Minors: Horticultural Science, Organic and Sustainable Crop Production, Plant Molecular and Cellular Biology
- Student Organization: Gator Citrus Club, Gator Gardening Club, Organic and Sustainable Agriculture Club, Horticultural Sciences Students Club
- More than $40,000 in scholarships are awarded annually to Horticultural Science students
- Students complement classroom learning with hands-on experience at farms and gardens
Marine Sciences

From oceans to coastal wetlands, students will learn about marine organisms and their behaviors and interactions with the environment. Marine Sciences students study oceanography, statistics, fisheries and aquatic sciences, and invertebrate biodiversity. Students can focus elective courses on ecology, organismal biology, economics, human dimensions, and/or quantitative or professional skills.

ffgs.ifas.ufl.edu

UF
IFAS CALS
UNIVERSITY OF FLORIDA

COLLEGE OF AGRICULTURAL AND LIFE SCIENCES
CAREERS

• Aquaculture Specialist
• Biology Educator
• Environmental Consultant
• Ecotourism Manager
• Marine Biologist
• Marine Resource Ecologist
• Protected Species Manager
• Research Scientist
• Scientific Diver

DID YOU KNOW?

• Related Minors: Fisheries and Aquatic Sciences
• Student Organizations: Marine Biology Club, Salty Gators, Gator Scuba Club
• Study abroad in Cuba
• This major is shared between two UF colleges, with Marine Sciences in CALS focusing on marine ecology and resource management
Microbiology and Cell Science

The study of small living organisms, Microbiology and Cell Science includes emphasis on molecular biology and genetics; immunology; virology; host-pathogen interactions; cellular ultrastructure; environmental microbiology; and microbial physiology, metabolism and regulation. Microbiology and Cell Science students study chemistry, physics, bacterial pathogens and genetics.
CAREERS

• Biotechnologist
• Doctor, Veterinarian, Pharmacist or Dentist
• Food Microbiologist
• Medical Technologist
• Microbiology Technician
• Molecular Biologist
• Public Health Scientist
• Quality Assurance Manager
• Research Assistant

DID YOU KNOW?

• Related Minors: Bioinformatics
• Student Organizations: American Society for Microbiology (ASM) Gators, Virology Club
• Study abroad in Switzerland, Germany, France, and Holland
• This major is shared between two UF colleges with Microbiology and Cell Science in CALS focusing on communication skills in addition to science
• Many students pursue graduate or professional school

Offered at the Gainesville location and through UF Online.
Natural Resource Conservation

Conservationists protect and sustain our world’s natural resources for future generations. Well-versed in economics and communications, Natural Resource Conservation students are equipped with strong analytical, critical thinking, and interpersonal skills. Natural Resource Conservation students study chemistry; biology; ecology; and forest, wildlife, fisheries, and aquatic resources.

ffgs.ifas.ufl.edu

UF
IFAS CALS
UNIVERSITY of FLORIDA

COLLEGE OF AGRICULTURAL AND LIFE SCIENCES
CAREERS

- Conservation Biologist
- Ecologist
- Environmental Consultant
- Environmental Educator
- Natural Areas Guide
- Natural Resource Policy Adviser
- Natural Resource Specialist
- Protected Areas Manager
- Stewardship Manager

DID YOU KNOW?

- Related Minors: Forest Resources and Conservation
- Student Organization: Natural Resources Diversity Initiative
- Curriculum can vary from very focused and specific to broad and multi-disciplinary depending on students’ interests
- Students choose from faculty advisors in either the School of Forest, Fisheries, and Geomatics Sciences or the Wildlife Ecology and Conservation Department

Offered at both the Gainesville and Milton locations.

cals.ufl.edu  |  cals-dean@ufl.edu  |  352-392-1963  |  @ufcals
Nutritional Sciences

The Nutritional Sciences major encompasses all aspects of the consumption and utilization of food by people and animals as well as how these processes affect the health of individuals and populations. Nutritional Sciences students study organic chemistry, physics, food science, genetics, nutrition, biology of microorganisms and diseases.

fshn.ifas.ufl.edu

UF IFAS CALS UNIVERSITY of FLORIDA

COLLEGE OF AGRICULTURAL AND LIFE SCIENCES
CAREERS

• Biochemist
• Clinical Nutrition Manager
• Doctor, Veterinarian, Pharmacist or Dentist
• Nutrition Educator
• Pharmaceutical Sales Representative
• Public Policy Consultant
• Scientific Researcher
• Sports Nutritionist

DID YOU KNOW?

• Related Minors: Food Science, Nutritional Sciences
• Student Organizations: Food Science and Human Nutrition Club, The Campus Kitchens Project
• Study abroad in France, Greece and Italy
• State-of-the-art facilities include a commercial grade test kitchen, technology-enhanced lab, and human nutritional research facility
Plant scientists sustain and improve our current and future world as they work with foods, fibers, fuel, flowers, pharmaceuticals, urban forests, soil health, plant pests, and our natural environs. Plant Science students study biology, plant morphology and physiology, chemistry, entomology, physics, soil and water sciences, plant identification, plant pathology, plant propagation, and environmental horticulture.

plantscience.ifas.ufl.edu
CAREERS

• Agronomist
• Crop Geneticist
• Extension Agent
• Landscaper

• Nursery Manager
• Plant Breeder
• Plant Pathologist
• Sports Turf Manager

DID YOU KNOW?

• Related Minors: Environmental Horticulture, Golf and Sports Turf Management, Plant Molecular and Cellular Biology, Plant Science
• Student Organizations: Agronomy/Soils Club, Environmental Horticulture Club, Turfgrass Club
• Students compete at the Professional Landcare Network (PLANET) Student Career Days, developing necessary skills for green industry careers
• Complement in-class learning with hands-on experience in scientific laboratories, fields, and greenhouses

Offered at the Gainesville, Apopka, Milton and Fort Lauderdale locations.
Soil and Water Sciences

Soil and Water Sciences involves managing land and water resources across a wide range of ecosystems, including agricultural, forested, range, urban and wetlands. Soil and Water Sciences students have a strong science and math background and study biology, calculus, microbiology, chemistry, physics and ecology.

soils.ifas.ufl.edu
SPECIALIZATIONS

- Soil Science
- Water Science

CAREERS

- Environmental Lawyer
- Erosion Control Specialist
- Hydrologist
- Policy Analyst
- Reclamation Specialist
- Research Scientist
- Soil Chemist
- Soil Conservationist
- Water Resource Manager

DID YOU KNOW?

- Related Minor: Soil and Water Sciences
- Student Organizations: Wetlands Club, Agronomy/Soils Club
- Students can become Certified Professional Soil Scientists through the Soil Science Society of America or Wetland Professionals in Training (WPIT) through the Society of Wetland Scientists
- Students in this major help to protect and manage the world’s most valuable resources
Wildlife Ecology and Conservation

This major focuses on developing students’ knowledge of the conservation and management of wildlife and habitats for the greatest aesthetic, ecological, economic, and recreational values. Students in the Wildlife Ecology and Conservation major study biology, chemistry, ecology, calculus, soil science, plant taxonomy, entomology, geography, zoology, and sustainability.
SPECIALIZATIONS

- Pre-professional*
- Wildlife Ecology and Conservation

*D satisfies academic requirements for professional school programs in medicine, dentistry, veterinary medicine, pharmacy and other health-related programs

CAREERS

- Conservation Coordinator
- Doctor, Veterinarian, Pharmacist or Dentist
- Environmental Educator
- Habitat Manager
- Nuisance Wildlife Technician
- Public Health Specialist
- Scientific Researcher
- Wildlife Biologist
- Wildlife Rehabilitator

DID YOU KNOW?

- Related Minor: Wildlife Ecology and Conservation
- Student Organizations: The Wildlife Society, Natural Resources Diversity Initiative, Gators Ready for Exceptional Birding Experiences
- Study abroad in Belize, New Zealand, Nicaragua, and Swaziland
- Course locations include the UF Natural Area Teaching Lab and the Ordway-Swisher Biological Station
- UF has the only Wildlife Ecology and Conservation undergraduate major in Florida