

FOREST RESOURCES AND CONSERVATION

Program Information

Director: T. "Red" Baker III

Graduate Coordinator: S. Bohlman

Since 1937 the Change to School of Forest, Fisheries and Geomatics Sciences has prepared students for professional careers caring for natural resources. We emphasize the role of people in managing both terrestrial and aquatic systems, to produce the myriad of benefits and services they provide. Our faculty have a broad range of interests, including ecology, economics/policy, and recreation/education, and are united by an interest in environmental resources, rather than by traditional academic discipline. The School is composed of three programmatic areas: Fisheries and Aquatic Sciences, Forest Resources and Conservation and Geomatics which is a concentration within the Forest Resources and Conservation major. These programs offer seven different degree options (including two professional masters degrees), as well as concentrations and certificates in a diversity of specific areas. Minimum requirements for these degrees are given in the Graduate Degrees (<http://gradcatalog.ufl.edu/graduate/degrees/>) section of this catalog.

The SFFGS offers graduate programs leading to the Master of Forest Resources and Conservation (professional, non-thesis), Master of Science (thesis and non-thesis), and Doctor of Philosophy degrees in Forest Resources and Conservation. The Master of Science non-thesis degree may be taken entirely online. Minimum requirements for these degrees are given in the Graduate Degrees (<http://gradcatalog.ufl.edu/graduate/degrees/>) section of this catalog.

The Forest Resources and Conservation program prepares students to work with the ecological, economic, and social aspects of natural resources, including the management of spatial information gathered through traditional surveying as well as remote sensing. Faculty have a wide variety of specializations, including fire ecology, land tenure, tree genetics, recreation management, environmental education, geographic information systems, silviculture, forest economics, and environmental policy. Further information, including specific degree options, faculty biographies, and information on the admissions process, is available at: <https://ffgs.ifas.ufl.edu/>

Degrees Offered

Degrees Offered with a Major in Forest Resources and Conservation

- Doctor of Philosophy
 - without a concentration
 - concentration in Agroforestry
 - concentration in Ecological Restoration
 - concentration in Geographic Information Systems
 - concentration in Geomatics
 - concentration in Hydrologic Sciences
 - concentration in Natural Resource Policy and Administration
 - concentration in Toxicology

- concentration in Tropical Conservation and Development
- concentration in Wetland Sciences
- Master of Forest Resources and Conservation
 - without a concentration
 - concentration in Agroforestry
 - concentration in Geographic Information Systems
 - concentration in Geomatics
 - concentration in Natural Resource Policy and Administration
 - concentration in Tropical Conservation and Development
 - concentration in Wetland Sciences
- Master of Science
 - without a concentration
 - concentration in Agroforestry
 - concentration in Ecological Restoration
 - optional second concentration in Hydrologic Sciences
 - concentration in Geographic Information Systems
 - concentration in Geomatics
 - concentration in Hydrologic Sciences
 - concentration in Natural Resource Policy and Administration
 - concentration in Tropical Conservation and Development
 - concentration in Wetland Sciences

Requirements for these degrees are given in the Graduate Degrees (<http://gradcatalog.ufl.edu/graduate/degrees/>) section of this catalog.

Courses

School of Forest Resources and Conservation Courses

Geomatics Concentration Courses

| Code | Title | Credits |
|-----------|--|---------|
| GIS 6103 | GIS Programming and Customization | 3 |
| GIS 6116 | Geographic Information Systems Analysis | 3 |
| SUR 5365 | Digital Mapping | 3 |
| SUR 5385 | Remote Sensing Applications | 3 |
| SUR 5386 | Image Processing for Remote Sensing | 3 |
| SUR 5525 | Least Squares Adjustment Computations | 3 |
| SUR 6346 | Marine Geomatics | 3 |
| SUR 6355 | Analytical Photogrammetry | 3 |
| SUR 6377 | Geospatial Application of UASs | 3 |
| SUR 6395 | Topics in Geographic Information Systems | 3 |
| SUR 6502C | Foundations of UAS Mapping | 3 |
| SUR 6535 | GPS-INS Integration | 3 |
| SUR 6536 | Geodesy and Geodetic Positioning | 3 |
| SUR 6905 | Special Problems in Geomatics | 1-6 |
| SUR 6934 | Topics in Geomatics | 1-4 |
| SUR 6940C | Practicum in UAS Mapping | 3 |

Fisheries and Aquatic Sciences Program Courses

| Code | Title | Credits |
|-----------|--|---------|
| FAS 5015 | Aquaculture I | 3 |
| FAS 5203 | Biology of Fishes | 3 |
| FAS 5203C | Biology of Fishes | 4 |
| FAS 5255 | Diseases of Warmwater Fish | 3 |
| FAS 5276C | Field Ecology of Aquatic Organisms | 4 |
| FAS 5335C | Applied Fisheries Statistics | 4 |
| FAS 5407 | Biology of Fishery and Aquaculture Invertebrates | 3 |

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|-------------|--|----------------|
| FAS 5901 | Scientific Thinking in Ecology | 2 |
| FAS 6154 | Marine Adaptations: Environmental Physiology | 3 |
| FAS 6165 | Fish and Crustacean Nutrition | 3 |
| FAS 6176 | Algae Biology and Ecology | 3 |
| FAS 6238 | Environmental Physiology of Fishes | 3 |
| FAS 6256 | Fish and Aquatic Invertebrate Histology | 3 |
| FAS 6272 | Marine Ecological Processes | 3 |
| FAS 6273 | Trophic Ecology of Fishes | 3 |
| FAS 6275 | Freshwater Ecology | 3 |
| FAS 6310C | Fish & Limnology | 4 |
| FAS 6337C | Fish Population Dynamics | 4 |
| FAS 6339C | Advanced Quantitative Fisheries Assessment | 4 |
| FAS 6355C | Fisheries Management | 4 |
| FAS 6356 | Fisheries Enhancement | 2 |
| FAS 6357 | Marine Protected Areas | 3 |
| FAS 6360 | Invasion Ecology of Aquatic Animals | 3 |
| FAS 6408 | Aquaculture II | 3 |
| FAS 6416 | Spatial Ecology and Modeling of Fish Populations | 2 |
| FAS 6426 | Applied Aquaculture Genetics | 3 |
| FAS 6705 | Fisheries and aquaculture: An economics perspective | 3 |
| FAS 6905 | Individual Study | 1-6 |
| FAS 6910 | Supervised Research | 1-5 |
| FAS 6932 | Special Topics in Fisheries and Aquatic Sciences | 1-4 |
| FAS 6933 | Graduate Symposium | 1 |
| FAS 6935 | Contemporary Problems in Fisheries and Aquatic Sciences | 2 |
| FAS 6940 | Supervised Teaching | 1-5 |
| FAS 6971 | Research for Master's Thesis | 1-15 |
| FAS 7979 | Advanced Research | 1-12 |
| FAS 7980 | Research for Doctoral Dissertation | 1-15 |
| FNR 6406C | Lidar Remote Sensing for Forestry Applications | 3 |
| FNR 6462 | Foundations of Geospatial AI for Natural Resource Management | 3 |
| FNR 6504 | Analysis of Forest Ecosystems | 3 |
| FNR 6505 | Forest Ecosystem Health | 3 |
| FNR 6506 | Forest Ecosystem Resilience | 3 |
| FNR 6516 | Management and Restoration of Invaded Ecosystems | 3 |
| FNR 6560 | Intro to Bayesian Statistics for Life Sciences | 3 |
| FNR 6564 | Ecohydrology | 3 |
| FNR 6565 | Simulation Analysis of Forest Ecosystems | 3 |
| FNR 6607 | Conservation Behavior | 3 |
| FNR 6615C | Visualization of Ecological Data | 3 |
| FNR 6620 | Community Forest Management | 3 |
| FNR 6628 | Watershed Management and Restoration | 3 |
| FNR 6665 | Natural Resource Economics and Valuation | 3 |
| FNR 6668 | Natural Resources in a Changing Climate | 3 |
| FNR 6669 | Policy and Economics of Natural Resources | 3 |
| FNR 6905 | Research Problems in Forest Resources and Conservation | 1-6 |
| FNR 6910 | Supervised Research | 1-5 |
| FNR 6933 | Seminar | 1 |
| FNR 6934 | Topics in Forest Resources and Conservation | 1-4 |
| FNR 6940 | Supervised Teaching | 1-5 |
| FNR 6971 | Research for Master's Thesis | 1-15 |
| FNR 7979 | Advanced Research | 1-12 |
| FNR 7980 | Research for Doctoral Dissertation | 1-15 |
| GIS 6116 | Geographic Information Systems Analysis | 3 |
| PCB 5530 | Plant Molecular Biology and Genomics | 3 |
| PCB 6528 | Plant Cell and Developmental Biology | 3 |
| PCB 6555 | Introduction to Quantitative Genetics | 3 |
| Code | Title | Credits |
| SUR 6377 | Geospatial Application of UASs | 3 |
| SUR 6502C | Foundations of UAS Mapping | 3 |
| SUR 6940C | Practicum in UAS Mapping | 3 |

Forest Resources and Conservation Program Courses

| Code | Title | Credits |
|-----------|--|---------|
| FAS 6306C | Spatial Sciences for Marine Environmental Characterization | 4 |
| FAS 6356 | Fisheries Enhancement | 2 |
| FNR 5015 | Ecosystem Restoration Principles and Practice | 3 |
| FNR 5016 | Ecology and Restoration of Longleaf Pine Ecosystems | 3 |
| FNR 5072C | Environmental Education Program Development | 3 |
| FNR 5405 | Forest Information Systems | 3 |
| FNR 5608 | Research Planning | 3 |
| FNR 5625 | Managing Public Lands and Waters | 3 |
| FNR 5626 | Forest Resource Manag | 3 |
| FNR 6006 | Silviculture: Concepts and Application | 3 |
| FNR 6046C | Lidar Remote Sensing for Forestry Applications | 3 |
| FNR 6061 | Conflict and Collaboration in Natural Resources | 3 |
| FNR 6075 | Science Communication & Public Education | 3 |
| FNR 6085 | Landscape Planning for Ecotourism | 3 |
| FNR 6134 | Physiology of Forest Trees | 3 |
| FNR 6308 | Urban Forestry | 3 |
| FNR 6314 | Issues in Southeastern Forest Health | 3 |
| FNR 6315 | Tropical Forestry | 3 |

College of Agricultural and Life Sciences Courses

| Code | Title | Credits |
|----------|---|---------|
| ALS 5156 | Agricultural Ecology Principles and Applications | 3 |
| ALS 5905 | Individual Study | 1-4 |
| ALS 5932 | Special Topics | 1-4 |
| ALS 6046 | Grant Writing | 2 |
| ALS 6166 | Exotic Species and Biosecurity Issues | 3 |
| ALS 6921 | Colloquium on Plant Pests of Regulatory Significance | 1 |
| ALS 6925 | Integrated Plant Medicine | 4 |
| ALS 6931 | Plant Medicine Program Seminar | 1 |
| ALS 6935 | Topics in Biological Invasions | 3 |
| ALS 6942 | Principles of Plant Pest Risk Assessment and Management | 3 |
| ALS 6943 | Internship in Plant Pest Risk Assessment and Management | 1-10 |
| ANS 6936 | Graduate Seminar in Animal Molecular and Cell Biology | 1-2 |
| BCH 5045 | Graduate Survey of Biochemistry | 4 |
| FNR 6933 | Seminar | 1 |

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| STA 6093 | Introduction to Applied Statistics for Agricultural and Life Sciences | 3 |
| STA 6329 | Matrix Algebra and Statistical Computing | 3 |

Student Learning Outcomes

Forest resources & Conservation (PHD)

SLO 1 Knowledge

Describes and explains theories and concepts in major-specific and related subject matter areas relevant to the individualized focus of the degree program

SLO 2 Skills

Critically evaluates literature, analyzes and synthesizes information, applies experimental and/or descriptive research methodologies, creates new knowledge through discovery, and effectively communicates information

SLO 3 Professional Behavior

Displays honest, ethical, and culturally sensitive behavior and practices in all scholarly activities including teaching, research, and outreach

Forest resources & Conservation (MFRC)

SLO 1 Knowledge

Describes and explains theories and concepts in major-specific and related subject matter areas relevant to the individualized focus of the degree program

SLO 2 Skills

Critically evaluates literature, analyzes and synthesizes information, applies experimental and/or descriptive research methodologies, creates new knowledge through discovery, and effectively communicates information

SLO 3 Professional Behavior

Displays honest, ethical, and culturally sensitive behavior and practices in all scholarly activities including teaching, research, and outreach

Forest Resources & Conservation (MS)

SLO 1 Knowledge

Describes and explains theories and concepts in major-specific and related subject matter areas relevant to the individualized focus of the degree program

SLO 2 Skills

Critically evaluates literature, analyzes and synthesizes information, applies experimental and/or descriptive research methodologies, creates new knowledge through discovery, and effectively communicates information

SLO 3 Professional Behavior

Displays honest, ethical, and culturally sensitive behavior and practices in all scholarly activities including teaching, research, and outreach