

Department of Forestry

Forestry Major

Major Advisor: Dr. Stephen C. Grado

Office: 357 Thompson Hall

The Objective. The Forestry Major prepares its graduates for professional, science-based careers in the management and use of forested ecosystems. By combining courses offering a broad general education with specialized professional courses, the curriculum of the Forestry Major is designed to produce professionally competent graduates who have appropriate development in interpersonal relations, written and oral communications, cultural understanding, environmental awareness, and professional ethics.

Accreditation. Educational programs in the Forest Management, Wildlife Management, Urban Forestry, Environmental Conservation, and Forest Products concentrations lead to a professional degree in Forestry at Mississippi State University and are accredited by the Society of American Foresters (SAF). The Forest Products concentration is also accredited by the Society of Wood Science and Technology (SWST).

The Major. The core curriculum of the Forestry Major is comprised of specifically selected and intentionally designed courses which must be completed satisfactorily by each student who intends to graduate in this major. In addition to completing the core curriculum, each student must complete one of the five academic concentrations for specialized study offered by the Forestry Major. The five academic concentrations are Forest Management, Wildlife Management, Urban Forestry, Environmental Conservation, and Forest Products. Each concentration is an integral part of the Forestry Major and accredited by SAF. The Forest Products concentration is also accredited by SWST. Graduates of the major are qualified to become a Registered Forester in Mississippi after completing an examination for this purpose from the Board of Registration for Foresters in Mississippi.

The Forestry Major is designed for completion in four academic years which includes a nine-week Summer Field Program between the sophomore and junior years. The Summer Field Program contains many of the prerequisites needed to enroll in junior/senior level professional courses in the Forestry Major and students should plan their schedules accordingly. Correspondence courses are not accepted toward the forestry degree.

Transfer Students. Transfer students are encouraged to enter the Forestry Major at MSU by Spring semester of their sophomore year to complete their academic programs in the normal four-year period of study. Transfer students should be aware that course work taken elsewhere may not be accepted toward a degree in forestry. Only course work that is determined by the Forestry Department to be equivalent to required course work will be accepted. In addition, no course work will be considered for acceptance unless a grade of C or better has been earned.

Degree Requirements: In addition to General Education and College requirements, students must attain a minimum grade of C in Forestry major core courses listed in the CFR Undergraduate Handbook.

Natural Resource and Environmental Conservation Major

Major Advisor: Dr. Stephen C. Grado

Office: 357 Thompson Hall

The Objectives. The Natural Resource and Environmental Conservation major objectives are to prepare its graduates for professional careers by: 1) providing the broader general education fundamentals of written and oral communication; mathematics; biological, social, and physical sciences; and humanities which are critical to the development and advancement of well-qualified professionals; 2) providing both the relevant domains of knowledge and their application to the solution of real-world problems and achievement of defined objectives, including in-depth coverage of ecology and biology; measurement and evaluation of natural resource environmental components, properties, and functioning; management of ecosystems; and legal, regulatory, policy, and economic aspects of ecosystem administration and management; 3) establishing awareness of historical and current issues and policies affecting ecosystem management and conservation; and 4) providing a variety of educational experiences including lectures, discussion, simulations, computer applications, individual and group projects in laboratories and field experiences, and a capstone course teaching students to conduct environmental impact assessments. The purpose of these experiences is to ensure that graduates of the program can knowledgeably develop, apply, facilitate, and/or execute natural resource and environmental management plans that adequately address matters of ownership/public goals and objectives, ecosystem health and sustainability, and the legal and regulatory environment.

Accreditation. Educational programs in the Natural Resource Law and Administration, Resource Conservation Science, and Natural Resource Technology concentrations lead to a professional degree in Forestry at Mississippi State University and are accredited by the Society of American Foresters (SAF).

The Major. The core curriculum of the Natural Resource and Environmental Conservation major is comprised of specifically selected and intentionally designed courses that provide students with a broad background in the science, technology, and social aspects of natural resource and environmental science. In addition to general education and major core requirements, students will complete one of three concentrations: Natural Resource Law and Administration, Resource Conservation Science, or Natural Resource Technology.

Transfer students. Transfer students are encouraged to enter the Natural Resource and Environmental Conservation major at MSU in the Spring semester of their sophomore year to complete their academic programs in the normal four-year period of study. Transfer students should be aware that course work taken elsewhere may not be accepted toward the degree. Only course work that is determined by the Department of Forestry to be

equivalent to required course work will be accepted. In addition, no course work will be considered for acceptance unless a grade of C or better has been earned.

Degree Requirements. In addition to General Education and College requirements, students must attain a minimum grade of C on the Natural Resource and Environmental Conservation Major Core courses taught within the CFR.

Forestry

General Education Requirements

English Composition

| | | |
|------------|----------------------------|---|
| EN 1103 | English Composition I | 3 |
| or EN 1163 | Accelerated Composition I | |
| EN 1113 | English Composition II | 3 |
| or EN 1173 | Accelerated Composition II | |

Mathematics

| | | |
|------------------------------------|--------------------------------|---|
| See concentration for requirements | | 3 |
| ST 2113 | Introduction to Statistics | 3 |
| or BQA 2113 | Business Statistical Methods I | |

Natural Science

| | | |
|----------|-----------------------|---|
| CH 1043 | Survey of Chemistry I | 3 |
| BIO 1134 | Biology I | 4 |

Humanities

| | | |
|-------------------------------|--|---|
| See General Education courses | | 6 |
|-------------------------------|--|---|

Fine Arts

| | | |
|-------------------------------|--|---|
| See General Education courses | | 3 |
|-------------------------------|--|---|

Social/Behavioral Sciences

| | | |
|------------------------------|---|---|
| FO 4113 | Forest Resource Economics ¹ | 3 |
| Choose one of the following: | | 3 |
| AEC 2713 | Introduction to Food and Resource Economics | |
| EC 2113 | Principles of Macroeconomics | |
| EC 2123 | Principles of Microeconomics | |

Major Core ²

| | | |
|----------|--|---|
| BIO 1144 | Biology II | 4 |
| EPP 3124 | Forest Pest Management | 4 |
| FO 1101 | Forest Resources Survey | 1 |
| FO 2113 | Dendrology | 3 |
| FO 2213 | Forest Measurements | 3 |
| FO 3012 | Introduction to Forest Communities | 2 |
| FO 3015 | Forest Description and Analysis | 5 |
| FO 4123 | Forest Ecology | 3 |
| FO 4213 | Forest Biometrics | 3 |
| FO 4221 | Practice of Silviculture Laboratory | 1 |
| FO 4223 | Practice of Silviculture | 3 |
| FO 4231 | Introduction to Wood Supply Systems | 1 |
| FO 4233 | Forest Operations and Harvesting | 3 |
| FO 4313 | Spatial Technologies in Natural Resources Management | 3 |
| FO 4323 | Forest Resource Management | 3 |
| FO 4413 | Natural Resources Policy | 3 |
| FO 4423 | Professional Practice | 3 |
| PSS 3303 | Soils | 3 |
| WFA 3031 | Introductory Wildlife/Fisheries Practices | 1 |
| WFA 4153 | Principles of Wildlife Conservation and Management | 3 |

Oral Communication Requirement

| | | |
|--------------------------------------|--|---|
| CO 1003 | Fundamentals of Public Speaking | 3 |
| Computer Literacy Requirement | | |
| FO 3103 | Computer Application in Forest Resources | 3 |
| Writing Requirement | | |
| Choose one of the following: | | 3 |
| AELC 3203 | Professional Writing in Agriculture, Natural Resources, and Human Sciences | |
| MGT 3213 | Organizational Communications | |
| BIO 3013 | Professional Writing for Biologists | |

¹ This course is also part of the Major Core

² Note: Prerequisites and co-requisites are strictly enforced in the College of Forest Resources. It is the student's responsibility to be aware of prerequisites and co-requisites for all courses required in his or her program; prerequisites and co-requisites are identified in the Course Description section of this Bulletin.

Choose one of the following concentrations:

Academic concentrations within the Forestry Major are offered to encourage the student to design a program with the assistance of a faculty advisor that will fit his or her interests and aptitudes. Each concentration has been constructed by substituting restricted, or in some cases directed, electives for what otherwise would appear as Business, Science, Free, or Professional electives in the major. Concentrations are intended to provide opportunities for the student to focus beyond the fundamental education provided by the core curriculum of the Forestry Major.

Forest Management Concentration (FOMG)

Advisor: Dr. Donald L. Grebner

Office: 329 Thompson Hall

The Forest Management Concentration provides the basic education necessary to enter the profession of forestry with the Bachelor of Science degree, yet permits a wide choice of electives. The student may elect courses in almost any subject of interest, if prerequisites are met; however, credit toward the degree will not be allowed for remedial courses, nor for courses covering substantially the same material as courses already passed, or covering only part of the subject matter of required courses.

Faculty advisors are assigned to assist students in selecting electives to meet their personal objectives. A program of study leading to a degree in forestry and a number of business minors are available.

Courses to be taken in addition to those in the core curriculum of the Forestry Major are as follows:

| | | |
|---|---|------------|
| MA 1313 | College Algebra | 3 |
| PH 1113 | General Physics I | 3 |
| or PH 2213 | Physics I | |
| SBP 1103 | Introduction to Sustainable Bioproducts | 3 |
| FO 3113 | Forest Recreation Management | 3 |
| Business/Science Electives ¹ | | 9 |
| Professional Electives ¹ | | 9 |
| Free Elective | | 3 |
| Total Hours | | 128 |

¹ Professional electives and Business/Science electives are chosen from a list approved by the Department of Forestry.

Wildlife Management Concentration (WFMG)

Advisor: Dr. Heather D. Alexander

Office: 327 Thompson Hall

Undergraduate students who wish to prepare for careers in wildlife management may do so by completing the Wildlife Management Concentration of the Forestry Major. This concentration is designed for forestry students who intend to pursue careers that emphasize wildlife management within the context of multiple-use management of forest land. In addition, the Wildlife Management Concentration prepares the student for a number of wildlife management positions and fulfills the course requirements for certification as a Professional Wildlife Biologist by The Wildlife Society. Graduates of this concentration may undertake graduate studies in forestry or wildlife ecology and related areas.

Courses to be taken in addition to those in the core curriculum of the Forestry Major are as follows:

| | | |
|------------------------------------|---|------------|
| MA 1313 | College Algebra | 3 |
| BIO 3524 | Biology of Vertebrates | 4 |
| FO 3213 | Tree Physiology | 3 |
| or BIO 4214 | General Plant Physiology | |
| or WFA 4223 | Wildlife Plant Identification | |
| or BIO 4203 | Taxonomy of Spermatophytes | |
| FO 4353 | Natural Resource Law | 3 |
| WFA 3133 | Applied Aquatic and Terrestrial Ecology | 3 |
| WFA 4243 | Wildlife Techniques | 3 |
| WFA 4433 | Mammalogy | 3 |
| WFA 4443 | Ornithology | 3 |
| Professional Elective ¹ | | 3 |
| Physical Science Elective | | 3 |
| Total Hours | | 126 |

¹ Professional electives are chosen from a list approved by the Department of Forestry.

Environmental Conservation Concentration (ENCO)

Advisor: Dr. Heidi J. Renninger

Office: 313 Thompson Hall

The Environmental Conservation Concentration prepares students for careers dealing with complex environmental issues in the realm of forest resource management. Courses to be taken in addition to those in the core curriculum of the Forestry major are as follows:

| | | |
|---------------------------------|---|------------|
| MA 1313 | College Algebra | 3 |
| PH 1113 | General Physics I | 3 |
| or PH 2213 | Physics I | |
| WFA 3133 | Applied Aquatic and Terrestrial Ecology | 3 |
| FO 3113 | Forest Recreation Management | 3 |
| FO 4463 | Forest Hydrology and Watershed Management | 3 |
| FO 4472 | GIS for Natural Resource Management | 3 |
| & FO 4471 | and GIS for Natural Resource Management Lab | |
| or FO 4453 | Remote Sensing Applications | |
| Emphasis Electives ¹ | | 14 |
| Total Hours | | 127 |

¹ See Department Advisor for list of currently approved Emphasis Electives.

Urban Forestry Concentration (URBN)

Advisor: Dr. Stephen C. Grado

Office: 357 Thompson Hall

The Urban Forestry Concentration addresses an emerging need for the management of trees in towns and cities. Urban and community foresters manage trees along city streets, in municipal parks, private wood lots, and utility right-of-ways. Employers include federal, state, and municipal governments, private consultants, and industry.

Courses to be taken in addition to those in the core curriculum of the Forestry major are as follows:

| | | |
|------------|--|---|
| MA 1313 | College Algebra (or equivalent) | 3 |
| FO 3113 | Forest Recreation Management | 3 |
| FO 4353 | Natural Resource Law | 3 |
| FO 4471 | GIS for Natural Resource Management Lab | 3 |
| & FO 4472 | and GIS for Natural Resource Management | |
| or FO 4453 | Remote Sensing Applications | |
| FO 4683 | Introduction to Urban and Community Forestry | 3 |
| LA 3623 | Urban Planning Theory | 3 |
| FO 4453 | Remote Sensing Applications | 3 |

| | | |
|--------------------|---|------------|
| PS 1113 | American Government | 3 |
| PSS 2423 | Plant Materials I | 3 |
| PSS 4353 | Arboriculture and Landscape Maintenance | 3 |
| REF 3333 | Principles of Real Estate | 3 |
| Total Hours | | 128 |

Forest Products Concentration (FP)

Advisor: Dr. Laura A. Grace

Office: 309 Thompson Hall

The Forest Products Concentration is designed for students interested in the forest products industry. Courses to be taken in addition to those in the core curriculum of the Forestry Major are as follows:

| | | |
|---|---|------------|
| MA 1613 or MA 1713 | Calculus for Business and Life Sciences I Calculus I | 3 |
| CH 1053 | Survey of Chemistry II | 3 |
| PH 1113 | General Physics I | 3 |
| SBP 1103 | Introduction to Sustainable Bioproducts | 3 |
| SBP 3113 | Biomaterial Phys Mech | 3 |
| FP 4013 | Wood Anatomy | 3 |
| FP/SBP Processing Elective ¹ | | 3 |
| FP/SBP Electives ¹ | | 12 |
| Total Hours | | 128 |

¹ See Departmental Advisor for list of current approved electives.

Natural Resources and Environmental Conservation

General Education Requirements

English

| | | |
|-----------------------|--|---|
| EN 1103 or EN 1163 | English Composition I Accelerated Composition I | 3 |
| EN 1113 or EN 1173 | English Composition II Accelerated Composition II | 3 |

Fine Arts

| | | |
|---------|-------------------------------------|---|
| LA 1803 | Landscape Architecture Appreciation | 3 |
|---------|-------------------------------------|---|

Natural Sciences

| | | |
|----------|--------------------------------|---|
| BIO 1134 | Biology I | 4 |
| BIO 1144 | Biology II | 4 |
| GR 1114 | Elements of Physical Geography | 4 |
| PSS 3303 | Soils | 3 |
| PSS 3301 | Soils Laboratory | 1 |

Math

| | | |
|-----------------------|---|---|
| MA 1313 | College Algebra | 3 |
| ST 2113 or ST 3123 | Introduction to Statistics Introduction to Statistical Inference | 3 |

Humanities

| | | |
|---|------------------------|---|
| PHI 1123 | Introduction to Ethics | 3 |
| Any General Education Humanities course | | 3 |

Social/Behavioral Sciences

| | | |
|------------------------|---|---|
| AEC 2713 or EC 2123 | Introduction to Food and Resource Economics Principles of Microeconomics | 3 |
| SO 1003 | Introduction to Sociology | 3 |

Major Core

| | | |
|---|--|-----|
| Chemistry - See Concentration for requirements | | |
| FO 1101 | Forest Resources Survey | 1 |
| FO 2113 | Dendrology | 3 |
| FO 3113 | Forest Recreation Management | 3 |
| FO 4213 | Forest Biometrics | 3 |
| FO 4313 | Spatial Technologies in Natural Resources Management | 3 |
| FO 4343 | Forest Administration and Organization | 3 |
| FO 4353 | Natural Resource Law | 3 |
| FO 4413 | Natural Resources Policy | 3 |
| GR 2313 | Maps and Remote Sensing | 3 |
| NREC 3213 | Environmental Measurements | 3 |
| NREC 4423 | Environmental Assessment | 3 |
| WFA 3133 | Applied Aquatic and Terrestrial Ecology | 3 |
| Oral Communication Requirement | | |
| CO 1003 or CO 1013 | Fundamentals of Public Speaking Introduction to Communication | 3 |
| Computer Literacy Requirement | | |
| FO 3103 | Computer Application in Forest Resources | 3 |
| Writing Requirement | | |
| Choose one of the following: | | 3 |
| AELC 3203 | Professional Writing in Agriculture, Natural Resources, and Human Sciences | 3 |
| MGT 3213 | Organizational Communications | 3 |
| BIO 3013 | Professional Writing for Biologists | 3 |
| Concentration Courses - See Concentration Requirements | | 38 |
| Total Hours | | 124 |

Natural Resource Law and Administration Concentration (NRLA)

Advisor: Dr. Changyou Sun

Office: 317 Thompson Hall

There are numerous laws, regulations, and policies affecting natural resource administration and management that have created a need for professionals with an understanding of the complex interactions between the science of managing natural resources and laws, regulations, policies, and processes involved in their utilization and protection. This Concentration will provide students with a background in the science of natural resource management as well as a foundation in the legal, regulatory, and administrative environment in which this management occurs. Students completing this program will be prepared for post-graduate studies in law, public policy administration, and a wide range of natural resource disciplines, as well as employment with private and public organizations and agencies.

Natural Resource Law and Administration Core Courses

| | | |
|--|-----------------------------------|----|
| CH 1043 | Survey of Chemistry I | 3 |
| PHI 1113 | Introduction to Logic | 3 |
| BL 2413 | The Legal Environment of Business | 3 |
| PS 3063 | Constitutional Powers | 3 |
| Professional Electives - See Department Advisor for list of approved electives | | 20 |
| Free Electives | | 6 |
| Total Concentration Hours | | 38 |

Resource Conservation Science Concentration (RCS)

Advisor: Dr. Courtney M. Siegert

Office: 347 Thompson Hall

There is a need for expertise in resource conservation that relies on a science-based education and an understanding of effective applications of this knowledge to solve problems in natural resource settings. This Concentration promotes learning and skill sets in resource conservation and science that will meet this objective. Universities and employers are looking for natural resource professionals who have the necessary tools to be able to attend graduate school or become employed by private organizations, private industry, and state and federal agencies whose primary mission is environmental protection and resource conservation. This is particularly important since these organizations and agencies are under increasing

demands to document and verify their activities in both protecting natural resources (i.e., aquatic and terrestrial) and assessing impacts on human, floral, and faunal populations relying on these environments.

Resource Conservation Science Core Courses

| | | |
|---|---|-----------|
| MA 1713 | Calculus I | 3 |
| or MA 1613 | Calculus for Business and Life Sciences I | |
| CH 1211 | Investigations in Chemistry I | 1 |
| CH 1213 | Chemistry I | 3 |
| CH 1221 | Investigations in Chemistry II | 1 |
| CH 1223 | Chemistry II | 3 |
| FO 4463 | Forest Hydrology and Watershed Management | 3 |
| or FO 4483 | Forest Soils | |
| Emphasis Electives - Choose Terrestrial or Aquatic - See advisor for list of approved electives | | 15 |
| Professional Electives - See Department Advisor for list of approved electives | | 6 |
| Free Electives | | 3 |
| Total Concentration Hours | | 38 |

Natural Resource Technology Concentration (NRT)

Advisor: Dr. David L. Evans

Office: 353 Thompson Hall

Modern protocols for natural resource monitoring and management are highly dependent on utilization of spatial technologies such as remote sensing and geographic information systems (GIS). Spatial technologies and allied measurement and quantitative disciplines, combined with general knowledge needed for resource management, are essential in public- and private-sector natural resource professions. Students will also be amply prepared to continue with graduate studies in this area. This Concentration is specifically designed to provide students with the fundamental background to meet the rapidly growing need for professionals who can collect, manage, and manipulate complex geospatial and ancillary data used in natural resource management.

Natural Resource Technology Core Courses

| | | |
|---|---|-----------|
| MA 1323 | Trigonometry | 3 |
| CH 1043 | Survey of Chemistry I | 3 |
| FO 2213 | Forest Measurements | 3 |
| FO 4453 | Remote Sensing Applications | 3 |
| FO 4471 | GIS for Natural Resource Management Lab | 1 |
| FO 4472 | GIS for Natural Resource Management | 2 |
| Professional Electives - See Department Advisor for list of approved elective | | 20 |
| Free Electives | | 3 |
| Total Concentration Hours | | 38 |