

# Department of Forestry

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## Forestry Major

**Major Advisor: Dr. Courtney M. Siegert, Undergraduate Coordinator**

Office: 347 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 Business 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 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 Business. Each concentration is an integral part of the Forestry Major and accredited by SAF. 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. Graduates in the Wildlife Management concentration are eligible to become Associate Wildlife Biologists under the Wildlife Society.

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. Courtney M. Siegert**

Office: 347 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 Natural Resource and Environmental Conservation 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.

## BS in Forestry

### General Education Requirements

#### English Composition

EN 1103 or EN 1104	English Composition I Expanded English Composition I	3
EN 1113 or EN 1173	English Composition II Accelerated Composition II	3

#### Creative Discovery

Select from General Education courses		3
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#### Humanities

Select from General Education courses		6
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#### Social/Behavioral Sciences

FO 4113	Forest Resource Economics	3
AEC 2713 or EC 2113 or EC 2123	Introduction to Food and Resource Economics Principles of Macroeconomics Principles of Microeconomics	3

#### Quantitative Reasoning

MA 2113 or ST 2113 or ST 3123 or BQA 2113	Introduction to Statistics Introduction to Statistics Introduction to Statistical Inference Business Statistical Methods I	3
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#### Natural Sciences

CH 1043 or CH 1213	Survey of Chemistry I Chemistry I	3
BIO 1134	Biology I	4
BIO 1144	Biology II	4

### Major Core

#### Major Core <sup>2</sup>

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 3103	Computer Application in Forest Resources	3
FO 3213	Tree Physiology	3
FO 4113	Forest Resource Economics <sup>3</sup>	3
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
GR 1113	Physical Geography	3
PSS 3303	Soils	3
WFA 3031	Introductory Wildlife/Fisheries Practices	1
WFA 4153	Principles of Wildlife Conservation and Management	3
<b>Oral Communication</b>		
CO 1003	Fundamentals of Public Speaking	3
or CO 1013	Introduction to Communication	
<b>Writing</b>		
Technical Writing Elective		3

<sup>1</sup> Accepted for all concentrations but required for Forest Business Concentration

<sup>2</sup> 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 identified in the Course Description section of the Bulletin.

<sup>3</sup> FO 4113 is also used concurrently to meet university social/behavioral sciences requirement.

#### 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.

### Environmental Conservation Concentration (ENCO)

Advisor: Christine Fortuin

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:

FO 3113	Forest Recreation Management	3
Geospatial Elective <sup>1</sup>		3
FO 4463	Forest Hydrology and Watershed Management	3
FO 4483	Forest Soils	3
Professional Electives <sup>1</sup>		12
Free Elective		3
<b>Total Hours</b>		<b>128</b>

<sup>1</sup> Electives are selected from the list of electives approved by the Department of Forestry faculty.

### Forest Business Concentration (FOBN)

Advisor: Dr. Robert K. Grala

The Forest Business Concentration is designed for students interested in careers that emphasize business aspects of forestry such as timber markets, timber trade, timberland investment and insurance, forest real estate planning and investment, and timber procurement. Students may select from a wide range of electives to meet specific career objectives. Depending on career objectives and learning interests, students will follow a carefully designed set of core courses and electives, and upon coursework completion will qualify for one of the following College of Business minors: accounting, business administration, business information systems, insurance, economics, entrepreneurship, finance, management, marketing, real estate, or business analytics.

FO 3113	Forest Recreation Management	3
Business Elective from the College of Business <sup>1,2</sup>		21
Free Elective		3
<b>Total Hours</b>		<b>128</b>

- <sup>1</sup> If a business minor has a course load less than 21 credit hours required by a minor in business administration (e.g. 18 credit hours required by a minor in finance), a student will substitute the difference in credit hours by enrolling in an additional forest business elective. If a business minor requires less than 18 credit hours (e.g. 15 credit hours required by a minor in real estate), a student will substitute the difference in credit hours by enrolling in an additional forest business elective first and then enrolling in professional electives to maintain the program total of 128 credit hours.
- <sup>2</sup> Electives are selected from the list of electives approved by the Department of Forestry faculty.

## Forest Management Concentration (FOMG)

Advisor: Eric McConnell

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:

SBP 1103	Introduction to Sustainable Bioproducts	3
FO 3113	Forest Recreation Management	3
FO 3203	Forest Fire	3
FO 4253	Timber Procurement	3
Geospatial Electives <sup>1</sup>		3
Ecosystem Service Elective <sup>1</sup>		3
Professional Electives <sup>1</sup>		6
Free Elective		3
<b>Total Hours</b>		<b>128</b>

- <sup>1</sup> Electives are selected from the list of electives approved by the Department of Forestry faculty.

## Urban Forestry Concentration (URBN)

Advisor: Dr. Ashley Schulz

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:

PS 1113	American Government	3
PSS 2423	Plant Materials I	3
PSS 3473	Plant Materials II	3
PSS 4353	Arboriculture and Landscape Maintenance	3
LA 3623	Urban Planning Theory	3
FO 3113	Forest Recreation Management	3
FO 4683	Introduction to Urban and Community Forestry	3
Geospatial Elective <sup>1</sup>		3
Free Elective		3
<b>Total Hours</b>		<b>128</b>

- <sup>1</sup> Electives are selected from the list of electives approved by the Department of Forestry faculty.

## Wildlife Management Concentration (WFMG)

Advisor: Adam Polinko

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:

WFA 4243	Wildlife Techniques	3
Policy Elective <sup>1</sup>		3
Wildlife Biology Elective <sup>1</sup>		3
Wildlife Management Elective <sup>1</sup>		3
Zoology Elective <sup>1</sup>		3
Professional Elective <sup>1</sup>		9
Free Elective		3
<b>Total Hours</b>		<b>128</b>

<sup>1</sup> Electives are selected from the list of electives approved by the Department of Forestry faculty.

## BS in Natural Resource & Environmental Conservation

### General Education Requirements

#### English Composition

EN 1103	English Composition I	3
or EN 1104	Expanded English Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	

#### Creative Discovery

LA 1803	Landscape Architecture Appreciation	3
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#### Humanities

PHI 1123	Introduction to Ethics	3
Select from General Education courses		3

#### Social/Behavioral Sciences

AEC 2713	Introduction to Food and Resource Economics	3
or EC 2113	Principles of Macroeconomics	
or EC 2123	Principles of Microeconomics	
SO 1003	Introduction to Sociology	3

#### Quantitative Reasoning

ST 2113	Introduction to Statistics	3
or ST 3123	Introduction to Statistical Inference	

#### Natural Sciences

BIO 1134	Biology I	4
BIO 1144	Biology II	4
GR 1113	Physical Geography	3

### Major Core

#### Major Core

Chemistry - See Concentration for requirements		
NREC 1102	Survey of Natural Resource Management	2
FO 2113	Dendrology	3
FO 3103	Computer Application in Forest Resources	3
NREC 3113	Forest Recreation Management	3
FO 4213	Forest Biometrics	3
NREC 4313	Spatial Technologies in Natural Resources Management	3

FO 4343	Forest Administration and Organization	3
NREC 4353	Natural Resource Law	3
NREC 4413	Natural Resource Policy	3
GR 2313	Maps and Remote Sensing	3
NREC 3213	Environmental Measurements	3
NREC 4423	Environmental Assessment	3
PSS 3303	Soils	3
PSS 3301	Soils Laboratory	1
Ecology Elective <sup>1</sup>		3
<b>Oral Communication</b>		
CO 1003	Fundamentals of Public Speaking	3
or CO 1013	Introduction to Communication	
<b>Writing Requirement</b>		
Technical Writing Elective <sup>1</sup>		3
<b>Concentration Courses</b>		
See concentration requirements		41
<b>Total Hours</b>		<b>124</b>

<sup>1</sup> Electives are selected from the list of electives approved by the Department of Forestry faculty.

## Natural Resource Law and Administration Concentration (NRLA)

Advisor: Dr. Changyou Sun

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
or CH 1213	Chemistry I	
PHI 1113	Introduction to Logic	3
BL 2413	The Legal Environment of Business	3
PS 3063	Constitutional Powers	3
Professional Electives <sup>1</sup>		21
Free Electives		8
<b>Total Concentration Hours</b>		<b>41</b>

<sup>1</sup> Electives are selected from the list of electives approved by the Department of Forestry faculty.

## Resource Conservation Science Concentration (RCS)

Advisor: Dr. Courtney M. Siegert

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 1613	Calculus for Business and Life Sciences I	3
or MA 1713	Calculus 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
NREC 4463	Forest Hydrology and Watershed Management	3
FO 4483	Forest Soils	3
Professional Electives <sup>1</sup>		18
Free Electives		6
<b>Total Concentration Hours</b>		<b>41</b>

<sup>1</sup> Electives are selected from the list of electives approved by the Department of Forestry faculty.

## Natural Resource Technology Concentration (NRT)

**Advisor: Krishna Poudel**

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
or CH 1213	Chemistry I	
FO 2213	Forest Measurements	3
FO 4453	Remote Sensing Applications	3
FO 4473	GIS for Natural Resource Management	3
Professional Electives <sup>1</sup>		21
Free Electives		5
<b>Total Concentration Hours</b>		<b>41</b>

<sup>1</sup> Electives are selected from the list of electives approved by the Department of Forestry faculty.