FORESTRY MAJOR (B.S.F.)

https://colsa.unh.edu/natural-resources-environment/program/bsf/forestry-major

Description

Forestry is an interdisciplinary profession, embracing the sustainable management of forest ecosystems for productivity, biodiversity, and health. The Forestry program's goals are to provide a solid professional preparation with a strong field component, founded in a broad general education, and with the flexibility to allow students to pursue special abilities and interests. The Bachelor of Science in Forestry (B.S.F.) degree is accredited by the Society of American Foresters.

Forestry graduates help manage and conserve public and private forests, addressing major environmental challenges including climate change, biodiversity protection, and sustainable resource management. They use science, planning, and geospatial technology to protect and restore forest ecosystems, ensure a sustainable forest product industry, provide wildlife habitat and recreational opportunities, and conserve soils and watersheds.

Program Mission, Goals and Objectives

The **mission** of UNH's Department of Natural Resources and the Environment, of which the Forestry Program is an integral part, is to serve as an educational center for the scholarly study of environmental and social sciences, and their application to the policy and management of natural resources from local to global scales. This is accomplished through education, research and outreach. This mission reflects UNH's larger mission to provide comprehensive, high-quality undergraduate programs and graduate programs of distinction, including a strong commitment to serving the public good and promoting the excitement of discovery among faculty and students.

The **goal** of the Forestry Program is to train natural resource professionals to sustainably manage forested landscapes for diverse objectives and in ways that balance changing social, cultural, economic, and environmental interests and priorities.

Our **educational objectives** are to:

1. Develop a strong knowledge base about the ecology and dynamics of forest ecosystems, including interactions between trees, wildlife, insects, soils, water, humans, and other ecosystem components.
2. Understand how different policies and management decisions affect forest dynamics over short to long time scales, and on different spatial scales.
3. Cultivate the necessary skills to manage forests for diverse objectives and to assess, respect, and balance the interests of different groups to achieve societal benefits.
4. Be able to critically evaluate scientific information and integrate this with professional experience and changing societal values to support adaptive management of forest resources.

Requirements

Degree Requirements

Minimum Credit Requirement: 128 credits

Minimum Residency Requirement: 32 credits must be taken at UNH

Minimum GPA: 2.0 required for conferral*

Core Curriculum Required: Discovery & Writing Program Requirements

Foreign Language Requirement: No

All Major, Option and Elective Requirements as indicated.
**Major GPA requirements as indicated.*

Major Requirements

Code	Title	Credits
Required Courses		
BIOL 528	Applied Biostatistics I	4
MATH 424B	Calculus for Life Sciences	4
or MATH 420	Finite Mathematics	
or MATH 425	Calculus I	
NR 415	Natural Resources Field Methods	2
NR 425	Field Dendrology	4
NR 433	Wildlife Ecology	0
BIOL 409	Green Life: Introducing the Botanical Sciences	4
or BIOL 412	Introductory Biology: Evolution, Biodiversity and Ecology	
CHEM 403	General Chemistry I	0
or CHEM 411	Introductory Chemistry for Life Sciences	
or PHYS 401	Introduction to Physics I	
NR 411	Environmental and Resource Economics Perspectives	4
or ECON 402	Principles of Economics (Micro)	
NR 501	Studio Soils	4
NR 504	Freshwater Resources	4
NR 506	Forest Entomology	4
NR 527	Forest Ecology	4
NR 600	Work Experience	0
CMN 500	Public Speaking	4
or THDA 522	Storytelling, Story Theatre, and Involvement Dramatics	
NR 602	Natural Resources and Environmental Policy	4
NR 643	Economics of Forestry	4
NR 658	Introduction to Geographic Information Systems	4
NR 579	Wildland Fire Ecology and Management	4
NR 729	Silviculture	4
NR 757	Remote Sensing of the Environment	4
NR 782	Forest Health in a Changing World	4
or AGFS 651	Plant Pathology	
NR 745	Forest Management	4
NR 749	Forest Inventory and Modeling	4
RMP 711	Recreation Resource Management	4
or NR 767W	Social Impact Assessment	
or RMP 511	Issues of Wilderness and Nature in American Society	
Total Credits		**82**

Degree Plan

Sample Degree Plan

This sample degree plan serves as a general guide; students collaborate with their academic advisor to develop a personalized degree plan to meet their academic goals and program requirements.

First Year		Credits
BIOL 528	Applied Biostatistics I	4
ENGL 401	First-Year Writing	4
Select one of the following:		4
MATH 424B	Calculus for Life Sciences	
MATH 420	Finite Mathematics	
MATH 425	Calculus I	
NR 415	Natural Resources Field Methods	2
NR 425	Field Dendrology	4
NR 433	Wildlife Ecology	4
BIOL 409 or BIOL 412	Green Life: Introducing the Botanical Sciences or Introductory Biology: Evolution, Biodiversity and Ecology	4
Discovery Elective (FPA, HP, ETS, HUM, or WC)		4
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	Credits	**34**
Second Year		
CHEM 403 or CHEM 411 or PHYS 401	General Chemistry I or Introductory Chemistry for Life Sciences or Introduction to Physics I	4
NR 411 or ECON 402	Environmental and Resource Economics Perspectives or Principles of Economics (Micro)	4
NR 501	Studio Soils	4
NR 504	Freshwater Resources	4
NR 506	Forest Entomology	4
NR 527	Forest Ecology	4
NR 600	Work Experience	0
Oral Communications Skills Course		4
Discovery Elective (FPA, HP, HUM, ETS, or WC)		4
	Credits	**32**
Third Year		
NR 602	Natural Resources and Environmental Policy	4
NR 643	Economics of Forestry	4
NR 658	Introduction to Geographic Information Systems	4
NR 579	Wildland Fire Ecology and Management	4
NR 729	Silviculture	4
NR 757	Remote Sensing of the Environment	4
NR 782 or AGFS 651	Forest Health in a Changing World or Plant Pathology	4
Discovery elective (FPA, HP, HUM, ETS, or WC)		4
	Credits	**32**
Fourth Year		
NR 745	Forest Management	4
NR 749	Forest Inventory and Modeling	4
Select one of the following:		4
RMP 711	Recreation Resource Management	
NR 767W	Social Impact Assessment	
RMP 511	Issues of Wilderness and Nature in American Society	
Discovery elective (FPA, HP, HUM, ETS, or WC)		4
Elective		4
Elective		4
Elective		4
Elective		4
	Credits	**32**
	Total Credits	**130**

All forestry majors must satisfy the B.S.F. requirements and all Discovery Program requirements. Students must satisfy the Inquiry requirement of the Discovery Program by completing an Inquiry or Inquiry-attribute course. Seniors must also satisfy the capstone experience requirement of the Discovery Program. The capstone explores areas of interest based on the integration of prior learning. The capstone requirement may be satisfied through a course (NR 745 Forest Management), created work or product, or some form of experiential learning (e.g., honors thesis, mentored research project, and other special student activity). Departments are responsible for certifying that graduating seniors have met the capstone requirement for their majors.

Student Learning Outcomes

Program Learning Outcomes
Students will be able to:

- Identify the major species of plants and wildlife and their distribution and habitat requirements.
- Understand the ecological concepts related to the structure, composition, and dynamics of forest ecosystems, including succession, competition, productivity, nutrient cycling, stand development, and wildlife populations.
- Understand soil properties, hydrology, water resources, and watershed functions.
- Understand how forest health and dynamics are impacted by different human and natural disturbances, including pests and diseases, climate change, pollutants, extreme climate events, management interventions.
- Design and conduct forest inventories using appropriate sampling methods and units of measurement.
- Analyze and interpret forest inventory data, and to use the information to project future forest stand development processes and tree conditions.
- Use a variety of spatial analysis tools to assess landscape scale characteristics and produce maps of forest resources distribution.
- Explain forest development trajectories in both written and oral form and apply appropriate computer models and assessment techniques.
- Understand forest policy and the processes that influence policy development.
- Understand and apply economic principles to assessing the financial opportunities and risks of forestry operations.
- Understand how federal, state, and local laws and regulations govern the practice of forestry.
- Understand the administration, ownership, and organization of forest management enterprises.
- Integrate and effectively communicate the technical, financial, human resources, and legal aspects of administering public and private enterprises.

- Develop management plans that effectively integrate and balance multiple landowner (or stakeholder/societal) objectives and the ecological conditions and constraints of the biophysical system.
- Analyze the economic, environmental and social consequences of forest resource management strategies and decisions, and to evaluate their tradeoffs.
- Apply appropriate decision-making tools and techniques to evaluate alternative forest management practices and plans.
- Demonstrate effective problem-solving and teamwork skills, professional and ethical conduct, and respect for diverse values and interests.
- Describe and explain to different audiences in both written and oral form alternative options for managing forest resources to achieve multiple objectives.