Forestry

Programs

- Forest Management, B.S. *major*

Forest Management, B.S. *major*

The Forest Management undergraduate major will focus on producing field- and technology-competent foresters equipped with the knowledge and skills to sustainably manage forests for multiple objectives and outcomes. This program is designed as a companion degree, requiring transfer from or completion of a Forestry Tech A.A.S. prior to enrollment. The educational program in forestry leading to the baccalaureate degree in Forest Management is a candidate for accreditation by the Society of American Foresters (SAF), under the forestry standard.

Courses to complete baccalaureate degree in forestry for companion "2+2" transfer program with MNC Itasca and Vermillion Society of American Foresters (SAF) accredited Forestry Tech AAS programs.

Required Credits: 50
Required GPA: 2.25

I REQUIRED FORESTRY CORE

Complete the following courses:

- BIOL 2339 Ethics of Fish and Wildlife Management (3 credits)
- BIOL 4623 Forest Ecology (4 credits)
  or BIOL 3720 Plant Form and Function (4 credits)
- ECON 3500 Forestry and Natural Resource Economics (3 credits)
- FOR 3210 Regional Silviculture (3 credits)
- FOR 3230 Integrated Forest Management (3 credits)
- FOR 3310 Community and Tribal Forestry (3 credits)
- FOR 3510 Forest Biometry (4 credits)
- FOR 4120 Forest Hydrology (3 credits)
- FOR 4140 Forest Health (3 credits)
- GEOG 1224 Introduction to Map Use (3 credits)
- GEOG 3232 Intermediate Geographic Information Systems (3 credits)
- GEOG 3570 Recreational Lands Management for Sustainable Tourism (3 credits)
- GEOG 4140 Landscape Ecology (3 credits)
- GEOG 4285 Drone Applications (3 credits)

II NATURAL RESOURCE MANAGEMENT ELECTIVES

Select 2 courses from the following, or other relevant courses as determined in consultation with advisor:

- BIOL 3630 Conservation Biology (3 credits)
  or GEOG 3630 Conservation Biology (3 credits)
- BIOL 3723 Ecosystem Ecology (3 credits)
- BIOL 3730 Plant Diversity (4 credits)
- BIOL 4510 Ornithology (3 credits)
- BIOL 4520 Mammalogy (3 credits)
- BIOL 4534 Ichthyology (4 credits)
- ENVR 3600 Environmental Justice and Sustainability (3 credits)
- ENVR 3700 Natural Resource Management (3 credits)
- FOR 4220 Adaptive Silviculture (3 credits)
- GEOG 3226 Cartography (3 credits)
- GEOG 4130 Biogeography (3 credits)
- GEOG 4265 Spatial Analysis (3 credits)

Program Learning Outcomes | Forestry, B.S.

1. Safe and efficient navigation of remote settings to collect forest data.
2. Forest measurement and geospatial tools and equipment.
3. Forest data analysis methods and approaches to inform forest management decisions and silvicultural practices.
4. A holistic ecological understanding of forests and multidisciplinary perspectives on and approaches to forest management.
5. Knowledge and skills to sustainably manage forests for multiple mutually beneficial objectives and outcomes.

Forestry Courses

FOR 3210 Regional Silviculture (3 credits)
This course examines the silviculture of various forest regions in the United States with an emphasis on the Great Lakes region. Silviculture can be thought of as applied forest ecology; the theory and practice of influencing forest regeneration, species composition, and growth to accomplish a specified set of resource management objectives. This course will consider density management, regeneration practices, stand assessment and prescriptions, disturbance emulation, biodiversity conservation, and ecological restoration techniques through exploring alternative silvicultural strategies that follow from an understanding of regionally specific stand dynamics. Prerequisite: Forestry Technician A.A.S. or consent of instructor.

FOR 3230 Integrated Forest Management (3 credits)
This course will focus on negotiating the competing priorities often encountered when managing forests for multiple objectives. Case studies will be examined to provide examples of strategic planning, coordination frameworks, and the analytical concepts, techniques, and skills used in conflict resolution. Students will engage in group discussions to practice communication skills in advocating for various forest management practices from different points of view representing different stakeholder interests. Prerequisite(s): None.

FOR 3310 Community and Tribal Forestry (3 credits)
With 40% of Minnesota¿s forested land being privately owned, individual, community, and tribal forest management plays an important role in conserving forested ecosystems, supporting local livelihoods, and maintaining cultural values. This course is designed to develop and refine your understanding of non-government and tribal natural resource management perspectives and practices. Prerequisite(s): None.

FOR 3510 Forest Biometry (4 credits)
Forest Biometry will examine the forest measurement and sampling methods as well as the sampling designs and statistical approaches commonly implemented in forest management. Measurement and sampling methods topics will focus on the techniques used in determining the volume and quality of logs, trees, and stands of trees. Sampling designs and statistical approaches topics will focus on methods of collecting and analyzing forest data for resources management, including specialty forest products, fuels management, and conservation of rare populations. Prerequisite(s) Forestry Technician A.A.S. or consent of instructor. [Core Curriculum Goal Area(s) 3 (LC)]

FOR 4120 Forest Hydrology (3 credits)
Forest hydrology will focus on the movement and storage of water within forested ecosystems. Topics covered include major components of the hydrological processes occurring in forests, including canopy interception, throughfall, stemflow, infiltration, soil moisture, and its effects on nutrient availability and erosion. Forests and forest management practices have profound effects on local hydrology, so emphasis will be placed on managed forest systems and silvicultural practices to address water flow dynamics. Prerequisite(s): None.

FOR 4140 Forest Health (3 credits)
This course will introduce students to the concepts of forest health and illustrate how forested ecosystems are influenced by the interaction of diseases, insects and fire, as well as other biotic and abiotic disturbance agents. Emphasis will center on forests of the Great Lakes region. Students will learn the biology and ecology of common forest insects and diseases while also evaluating management strategies to prevent and mitigate their adverse effects. Prerequisite: Forest Technician A.A.S. or consent of instructor.

FOR 4220 Adaptive Silviculture (3 credits)
This course will explore applications of adaptive silviculture, a forest management approach that applies an understanding of the structure, function, and dynamics of natural forest ecosystems to achieve integrated environmental, economic, and social outcomes. Prerequisite: FOR 3210 or consent of instructor.

All-University Courses

The course numbers listed below, not always included in the semester class schedule, may be registered for by consent of the advisor, instructor, or department chair, or may be assigned by the department when warranted. Individual registration requires previous arrangement by the student and the completion of any required form or planning outline as well as any prerequisites.

1910, 2910, 3910, 4910 DIRECTED INDEPENDENT STUDY
1920, 2920, 3920, 4920 DIRECTED GROUP STUDY
1930, 2930, 3930, 4930 EXPERIMENTAL COURSE
1940, 2940, 3940, 4940 IN-SERVICE COURSE
1950, 2950, 3950, 4950 WORKSHOP, INSTITUTE, TOUR
1960, 2960, 3960, 4960 SPECIAL PURPOSE INSTRUCTION
1970, 2970, 3970, 4970 INTERNSHIP
1980, 2980, 3980, 4980 RESEARCH
1990, 2990, 3990, 4990 THESIS