Forestry (FOREST)

FOREST 2151: Dendrology
An introduction to the biology of trees, emphasizing identification in the field, taxonomy, ecology, geographic distribution and economic significance of forest species.

Credit Hours: 4
Prerequisites: BIO_SC 1200 or PLNT_S 2120 and PLNT_S 3130

FOREST 2541: Forest Utilization
Field studies of logging and milling of timber.

Credit Hour: 1
Prerequisites: SOIL 2100, FOREST 2151
Corequisites: FOREST 2540, FOREST 2542, FOREST 2543, FOREST 2544 and FOREST 2545

FOREST 2542: Forest Measurement and Inventory
Field measurement of standing trees including diameter, height and age. Estimation of forest timber resources using a variety of sampling schemes and techniques. Introduction to Arcview and growth models.

Credit Hour: 1
Prerequisites: SOIL 2100, FOREST 2151
Corequisites: FOREST 2540, FOREST 2541, FOREST 2543, FOREST 2544 and FOREST 2545

FOREST 2543: Forest Ecology Field Studies
Field studies of vegetation, soils, habitats and ecological units. Application of ecological principles of natural resource management and understanding of natural and managed forested communities with an emphasis on southeastern Missouri.

Credit Hour: 1
Prerequisites: SOIL 2100, FOREST 2151
Corequisites: FOREST 2540, FOREST 2541, FOREST 2542, FOREST 2544 and FOREST 2545

FOREST 2544: Introduction to Silviculture and Management
Management objectives and stand prescriptions, regeneration and intermediate silvicultural treatments, management on private and federal forest lands, tree evaluation and timber marking.

Credit Hour: 1
Prerequisites: SOIL 2100, FOREST 2151
Corequisites: FOREST 2540, FOREST 2541, FOREST 2542, FOREST 2543 and FOREST 2545

FOREST 2545: Forest Management Planning
Preparation and presentation of a written forest management plan using material and data developed in prerequisite courses.

Credit Hour: 1
Prerequisites: SOIL 2100, FOREST 2151
Corequisites: FOREST 2540, FOREST 2541, FOREST 2542, FOREST 2543 and FOREST 2544 concurrently

FOREST 3207: Forest Fire Control and Use
Fundamentals of all phases of fire protection. Objectives and techniques in use of fire.

Credit Hours: 2

FOREST 3212: Forest Health and Protection
Fundamental concepts of forest pathology and forest entomology including emphasis on ecological principles and management strategies.

Credit Hours: 4
Recommended: FOREST 2151

FOREST 3212W: Forest Health and Protection - Writing Intensive
Fundamental concepts of forest pathology and forest entomology including emphasis on ecological principles and management strategies.

Credit Hours: 4
Recommended: FOREST 2151

FOREST 3240: Wood Technology
Structure and identification of commercial woods. Relation of growth to physical and chemical properties of wood.

Credit Hours: 3

FOREST 3290: Urban Forestry
The culture and management of trees in urban areas, including ownership patterns, species composition, growth environment, amenities provided and evaluation. One-day field trip required.

Credit Hours: 2
Prerequisites: FOREST 2151 or PLNT_S 2210

FOREST 3300: Problems in Forestry
Problems in Forestry

Credit Hour: 1-99

FOREST 3350: Special Readings in Forestry
Critical review of current literature and research in forestry, fisheries and wildlife, and methods of presenting research results.

Credit Hour: 1-99

FOREST 4320: Forest Ecology
Principles of community, ecosystem, and population ecology and examination of the influence of environmental factors and human activity on forest dynamics, composition, structure and function.

Credit Hours: 5
Prerequisites: Senior standing only. Recommended FOREST 2151

FOREST 4320W: Forest Ecology - Writing Intensive
Principles of community, ecosystem, and population ecology and examination of the influence of environmental factors and human activity on forest dynamics, composition, structure and function.

Credit Hours: 5
Prerequisites: Senior standing only. Recommended FOREST 2151
FOREST 4330: Practice of Silviculture
Applied ecological principles, cultural practices, tree improvement techniques and treatments to forest stands and other lands for systematic production of goods and services.
Credit Hours: 3
Prerequisites: FOREST 4320; Senior standing only

FOREST 4350: Forest Economics
Economic principles applied to production/marketing of goods and services from forest land: emphasizes capital and land factors and investment alternatives related to time.
Credit Hours: 3
Prerequisites: AG_EC 1042 or AG_EC 2070

FOREST 4360: Photogrammetry, Inventory and Models
Applied course in the area of aerial photogrammetry, forest inventory, and forest growth models for developing, maintaining, and utilizing these tools in a forest management.
Credit Hours: 3

FOREST 4375: Forest Stand Dynamics
Examines the development of forest structure, the role of disturbance on forest change and the use of this knowledge in applying silvicultural systems. Both forest stand dynamics theories, structure diagrams, forest growth models, and long term data sets are used to understand stand dynamics.
Credit Hours: 3
Prerequisites: FOREST 4330

FOREST 4380: Forest Resource Management
Teaches resource managers how to develop a plan for the management of forest resources using managerial, economic, silvical and wildlife techniques for its enhancement and to meet the landowner's objectives.
Credit Hours: 3
Prerequisites: FOREST 4330 and FOREST 4350; Senior Standing only

FOREST 4385: Agroforestry I: Theory, Practice and Adoption
Understand biophysical, ecological, social and economic features of temperate and tropical agroforestry. Covers the basics of design, planning and implementation of agroforestry practices.
Credit Hours: 3
Prerequisites: junior standing

FOREST 4386: Agroforestry Economics and Policy
This course focuses on economic principles applied to the adoption and management of agroforestry practices at both the micro and macro scale. This includes cost and benefits analysis of ecosystem services and marketing of goods and services from agroforestry. More specifically, this course emphasizes both market and nonmarket valuation of managed tree and crop/livestock interactions; investment alternatives related to economics and natural resources; and decision making with relation to financial principles, environmental principles, and social principles. Graded on A-F basis only.
Credit Hours: 3
Prerequisites: FOREST 4385 or FOREST 7385, AG_EC 1041 or permission of instructor

FOREST 4390: Watershed Management and Water Quality
(cross-leveled with FOREST 7390). Hydrologic processes on wildland watersheds. Effects of forest land management on streamflow, erosion and water quality.
Credit Hours: 3
Prerequisites: MATH 1400; Senior standing only

FOREST 4940: Forestry Internship
Supervised professional experience with an approved public or private organization. May be repeated for credit. Graded on S/U basis only.
Credit Hour: 1-12
Prerequisites: Instructor's consent required

FOREST 4950: Forestry Undergraduate Research
Research apprenticeship with a faculty mentor. Students are expected to develop initial concept for the research, design experiments, collect data, and analyze data with faculty input, oversight, and guidance. Graded on A-F basis only.
Credit Hour: 1-4
Prerequisites: Senior standing, STAT 2530

FOREST 4994: Senior Honors Research in Forestry
Credit Hour: 1-3
Prerequisites: Instructor Consent Required

FOREST 7301: Topics in Forestry
Organized study of selected topics. Intended for upper-division and graduate students. Subjects and credit may vary from semester to semester.
Credit Hour: 1-99

FOREST 7310: Forest Ecology
Principles of community, ecosystem, and population ecology and examination of the influence of environmental factors and human activity on forest dynamics, composition, structure and function.
Credit Hours: 5
Prerequisites: FOREST 2151 or BIO_SC 3210 or instructor's consent

FOREST 7330: Practice of Silviculture
Applied ecological principles, cultural practices, tree improvement techniques and treatments to forest stands and other lands for systematic production of goods and services.
Credit Hours: 3
Prerequisites: FOREST 4320

FOREST 7350: Forest Economics
Economic principles applied to production/marketing of goods and services from forest land: emphasizes capital and land factors and investment alternatives related to time.
Credit Hours: 3
**Prerequisites:** Mathematics requirement completed; AG_EC 1041, or AG_EC 3080

**FOREST 7360: Photogrammetry, Inventory and Models**
Applied course in the area of aerial photogrammetry, forest inventory, and forest growth models for developing, maintaining, and utilizing these tools in a forest management.

**Credit Hours:** 3

**FOREST 7375: Forest Stand Dynamics**
Examines the development of forest structure, the role of disturbance on forest change and the use of this knowledge in applying silvicultural systems. Both forest stand dynamics theories, structure diagrams, forest growth models, and long term data sets are used to understand stand dynamics.

**Credit Hours:** 3
**Prerequisites:** FOREST 4330 or instructor's consent

**FOREST 7380: Forest Resource Management**
Teaches resource managers how to develop a plan for the management of forest resources using managerial, economic, silvical and wildlife techniques for its enhancement and to meet the landowner's objectives.

**Credit Hours:** 3
**Prerequisites:** FOREST 4330 and FOREST 4350

**FOREST 7385: Agroforestry I: Theory, Practice and Adoption**
Understand biophysical, ecological social and economic features of temperate and tropical agroforestry. Covers the basics of design, planning and implementation of agroforestry practices.

**Credit Hours:** 3

**FOREST 7390: Watershed Management and Water Quality**
(cross-leveled with FOREST 4390). Hydrologic processes on wildland watersheds. Effects of forest land management on streamflow, erosion and water quality.

**Credit Hours:** 3
**Prerequisites:** MATH 1400 or instructor's consent

**FOREST 8050: Research in Forestry**
Original research not leading to preparation of dissertation.

**Credit Hour:** 1-99

**FOREST 8090: Masters Thesis Research in Forestry**
Original investigation for presentation in a M.S. thesis. Graded on a S/U basis only.

**Credit Hour:** 1-10

**FOREST 8385: Ecological Principles of Agroforestry**
The course prepares students to develop an understanding of the complexity of agroforestry. Students will critically analyze classical and contemporary ecological theories and apply them in designing agroforestry practices to solve complex production and environmental issues. May be repeated for credit. Graded on A-F basis only.

**Credit Hours:** 3
**Prerequisites:** STAT 7070 or instructor's consent

**FOREST 8390:** Physical Hydrology
Students will obtain an understanding of hydrologic processes in terms of the occurrence, distribution and movement of water spanning the atmosphere and lithosphere. Students will have an opportunity to develop an understanding of physical processes governing mass and energy flux in wildland and anthropogenic systems. May be repeated for credit. Graded on A-F basis only.

**Credit Hours:** 3
**Prerequisites:** College Physics and Calculus I

**FOREST 8401: Topics in Forestry**
Organized study of selected topics. Subjects and credit may vary from semester to semester.

**Credit Hour:** 1-99
**Prerequisites:** instructor's consent

**FOREST 8430: Applied Silviculture**
Ecological and economic factors affecting application of silviculture in each of eighteen forest regions in United States.

**Credit Hours:** 3
**Prerequisites:** FOREST 4330

**FOREST 8450: Forest Soils**
Physical, chemical and biological properties of forest soils in relation to tree growth.

**Credit Hours:** 3
**Prerequisites:** FOREST 4330 or instructor's consent

**FOREST 8460: Advanced Forest Ecology**
Lecture/discussion based course emphasizing contemporary and classic ecological studies and concepts in the context of current forest ecology issues and research. Prerequisites: undergraduate ecology course

**Credit Hours:** 3

**FOREST 8490: Advanced Forest Management**
Modern quantitative methods to facilitate decision-making in harvest scheduling and regulation, land use allocation, and production planning in natural resource management.

**Credit Hours:** 3
**Prerequisites:** FOREST 4380

**FOREST 8515: Advanced Forest Biometrics**
An introduction to the topics and philosophy of ecological modeling. The course will guide students through the process of developing a conceptual model, formalizing the model, parameterizing, and running the model as well as analyzing the results.

**Credit Hours:** 3
**Prerequisites:** STAT 7070 or instructor's consent
FOREST 8530: Ecosystem Management: The Human Dimension
Overview of cultural, social, political and economic dimensions of natural resource problems and issues from an ecologically grounded management perspective.

Credit Hours: 3
Prerequisites: NAT_R 4353 or equivalent

FOREST 8620: Plant-Water Relations

Credit Hours: 3

FOREST 9087: Seminar in Forestry
Discussions of current developments in Forestry, and critical study of research programs. Graded on S/U basis only.

Credit Hour: 1

FOREST 9090: Dissertation Research in Forestry
Original investigation for presentation in a doctoral dissertation. Graded on a S/U basis only.

Credit Hour: 1-10