Forestry (FOREST)

FOREST 1102: Topics in Forestry - Biological/Physical/Mathematical
Organized study of selected topics in forestry. Intended for undergraduate students.

Credit Hour: 1-3

FOREST 1104: Topics in Forestry - Social Science
Organized study of selected topics in forestry. Intended for undergraduate students.

Credit Hour: 1-3

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_SCI 2110. Restricted to School of Natural Resources students (Environmental Sciences, Natural Resource Science and Management, and Parks, Recreation and Sport) during early registration. Department consent required

---

FOREST 2340: Tree Physiology
This course introduces and develops understanding of physical and chemical phenomena involved in the functions and activities of trees that produce growth.

Credit Hours: 3
Prerequisites: BIO_SC 1200, CHEM 1320; or instructor's consent

---

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

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

FOREST 2542: Forest Measurement and Inventory Field Studies
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. Graded on A-F basis only.

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

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 and FOREST 2151
Corequisites: FOREST 2542 and FOREST 2544

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 and FOREST 2151
Corequisites: FOREST 2541, FOREST 2542

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 3201: Topics in Forestry
Organized study of selected topics. Intended primarily for undergraduate Forestry students. Subjects and credit may vary from semester to semester.

Credit Hour: 1-99

FOREST 3207: Forest Fire Control and Use
This course will provide a background in the science, ecology, and application of fire. Students will gain an understanding of how fire is influenced by the physical environment and the fuels present. Concepts and application of fire behavior modeling will be presented for planning wildfire control and prescribed burning. The unique relationship between humans and fire and how that has changed over time will be discussed. We will survey fire effects on key ecosystem attributes such as vegetation, wildlife habitat/populations, forest products, biodiversity and conservation, and soil productivity. The technical aspects of prescribed burning planning and implementation will be discussed and demonstrated. We will overview how wildfire and prescribed fire management varies among state and federal natural resource agencies. Graded on A-F basis only.

Credit Hours: 3

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

Credit Hours: 3
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: 3
Recommended: FOREST 2151

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_SCI 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 4301: Topics in Forestry
Organized study of selected topics. Intended for upper-division students. Subjects and credit may vary from semester to semester.

Credit Hours: 3

FOREST 4320: Forest Ecology
(cross-leveled with FOREST 7320). 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. Graded on A-F basis only.

Credit Hours: 5
Prerequisites: At least sophomore standing. Recommended FOREST 2151

FOREST 4320W: Forest Ecology - Writing Intensive
(cross-leveled with FOREST 7320). 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. Graded on A-F basis only.

Credit Hours: 5
Prerequisites: At least sophomore standing
Recommended: FOREST 2151

FOREST 4330: Practice of Silviculture
(cross-leveled with FOREST 7330). 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: 4
Prerequisites: FOREST 4320
Recommended: FOREST 4375

FOREST 4341: Forest Harvesting and the Environment
Forest harvesting is a critical phase for meeting ecological, economical, and societal objectives within forestland and woodland settings. We will be exploring different harvesting systems; planning and designing harvests given various management objectives; and understanding the complexity of mitigating short- and long-term environmental impacts. Graded on A-F basis only.

Credit Hours: 3
Prerequisites: FOREST 2541 and FOREST 2542 or permission of the instructor

---

FOREST 4350: Forest Economics
(cross-leveled with FOREST 7350). 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: ABM 1042 or ABM 1041 or ABM 2070

FOREST 4360: Forest Measurements
(cross-leveled with FOREST 7360). Applied course in the area of forest inventory and forest growth models for developing, maintaining, and utilizing these tools in forest management.

Credit Hours: 3
Recommended: NAT_R 4110

FOREST 4375: Forest Stand Dynamics
(cross-leveled with FOREST 7375). 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
Recommended: FOREST 4330

FOREST 4380: Forest Resource Management
(cross-leveled with FOREST 7380). The class covers fundamental decisions foresters make in managing the timber resource, including stand and forest-level decisions, and planning and administrating harvesting operations.

Credit Hours: 3
Prerequisites or Corequisites: FOREST 4330

FOREST 4380W: Forest Resource Management-Writing Intensive
(cross-leveled with FOREST 7380). 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 or Corequisites: FOREST 4330

FOREST 4385: Agroforestry I: Theory, Practice and Adoption
(cross-leveled with FOREST 7385). 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: Senior standing

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 4945: Experiential Learning in Industry Internship in Forestry
Learning experience combining observation, application, and reflection in a discipline-based industry internship. Course appears on transcript for zero credit and does not count toward full-time enrollment. No tuition or fees are charged. Graded on S/U basis only.

Credit Hours: 0
Prerequisites: instructor's consent

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 4955: Experiential Learning in Research in Forestry
A supervised learning experience contributing to faculty research. Course appears on transcript for zero credit and does not count toward full-time enrollment. No tuition or fees are charged. Graded on S/U basis only.

Credit Hours: 0
Prerequisites: instructor's consent

FOREST 4994: Senior Honors Research in Forestry

Credit Hour: 1-3
Prerequisites: Instructor Consent Required

FOREST 4995: Senior Honors Research in Forestry

Credit Hour: 1-3
Prerequisites: instructor's consent

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 7320: Forest Ecology
(cross-leveled with FOREST 4320). 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
(cross-leveled with FOREST 4330). 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: 4
Prerequisites: FOREST 4320

FOREST 7350: Forest Economics
(cross-leveled with FOREST 4350). 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; ABM 1042 or ABM 1041 or ABM 2070

FOREST 7360: Forest Measurements
(cross-leveled with FOREST 4360). Applied course in the area of forest inventory and forest growth models for developing, maintaining, and utilizing these tools in forest management.

Credit Hours: 3

FOREST 7375: Forest Stand Dynamics
(cross-leveled with FOREST 4375). 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
(cross-leveled with FOREST 4380). 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

FOREST 7385: Agroforestry I: Theory, Practice and Adoption
(cross-leveled with FOREST 4385). 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: FOREST 4385 or FOREST 7385 or permission of instructor

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 8395: Agroforestry Economics and Policy
This course discusses basic economic and financial principles, and their applications in agroforestry. Specifically, the discussion includes market demand and supply, market failure, non-market valuations, cost and benefit analysis, short term and long term economic analysis, economic valuation of ecosystem services, and the applications in agroforestry. Graded on A-F basis only.

Credit Hours: 3
Prerequisites: FOREST 4385 or FOREST 7385, ABM 1041 or permission of instructor

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, formulating, 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
Absorption, translocation, utilization and loss of water by plants . Biophysics of water movement in the soil-plant-atmosphere continuum. Effects of water deficits on physiological processes.

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