**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_S 2120 and PLNT_S 3130*

**FOREST 2540: Forest Hydrology Field Studies**
Introduction to forest hydrology, watershed management, water quantity and quality, climate and biophysical relationships.

*Credit Hour: 1*
*Prerequisites: SOIL 2100, FOREST 2151*
*Corequisites: FOREST 2541, FOREST 2542, FOREST 2543, FOREST 2544 and FOREST 2545*

**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 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**
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 3217: Fire and Society**
A study of the relationship between society (humans) and fire. What kind of role does fire play in day-to-day life? How has fire influenced our behavior since Day 1? How do we view fire today?

*Credit Hours: 2*

**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 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
Prerequisites: Senior standing only. Recommended FOREST 2151

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 4340: Tree Physiology
Lectures on physical and chemical phenomena involved in the functions
and activities of trees.
Credit Hours: 3
Prerequisites: BIOCHM 2110, BIO_SC 1200, CHEM 1100; or
instructor's consent

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 4365: Logging Systems: Operations and Analyses
A systems approach to timber harvesting from acquisition through
engineering to log transport. Regional aspects and influences will be
considered.
Credit Hours: 3
Prerequisites: FOREST 2540 and FOREST 2541

FOREST 4370: Wildland Fire Management
Management, administration, and organization of wildland and prescribed
fires and other natural and man-made disasters. Emphasis placed on
organizational arrangements of incidents rather than on either strategy or
tactics.
Credit Hours: 3
Prerequisites: FOREST 3207

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 4387: 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 4960: Special Readings in Forestry
Individualized study on particular topic in forestry. Graded on A-F basis only.

Credit Hour: 1-4
Prerequisites: Senior standing required

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 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 7340: Tree Physiology
Lectures on physical and chemical phenomena involved in the functions and activities of trees.

Credit Hours: 3
Prerequisites: BIOCHM 2110; BIO_SC 1200; CHEM 1100; or instructor's consent

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 7365: Logging Systems: Operations and Analysis
A systems approach to timber harvesting from acquisition through engineering to log transport. Regional aspects and influences will be considered.

Credit Hours: 3

FOREST 7370: Wildland Fire Management
Management, administration, and organization of wildland and prescribed fires and other natural and man-made disasters. Emphasis placed on organizational arrangements of incidents rather than on either strategy or tactics.

Credit Hours: 3
Prerequisites: FOREST 2543 and FOREST 2544

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 7320: 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 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: 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 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 8520: Social Forestry
Issues with using forestry as an international development tool; planning, implementing and evaluating farm and community forestry projects.

Credit Hours: 3
Prerequisites: FOREST 4350, or AG_EC 3270, or equivalent and 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 8540: Tree Growth-Quality Relationships
Response of tree growth (wood formation) to such environmental influences fertilization, moisture, nutrient supply, wounding pruning, etc.

Credit Hours: 3
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 8625: Plant-Water Relations Laboratory
Introduction to techniques and instrumentation used in studies of plant-water relations.

Credit Hours: 2
Corequisites: FOREST 8620

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

FOREST 9410: Seminar in Forestry
Discussions of current developments in Forestry, and critical study of research programs.

Credit Hour: 1