SIU Southern Illinois University
CARBONDALE

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Forestry

The School of Forestry and Horticulture offers advanced courses for the Master of Science degree in Forestry. In addition, curricula are available which permit graduate students with an interest in forestry to pursue a Doctor of Philosophy degree program in other units, including the Ph.D. in Agricultural Sciences. The Forestry program offers Master of Science students the opportunity to tailor their program to address their interests and career aspirations. Our faculty have expertise in:

- Forest Resource Management
- Ecological Restoration
- Fire Science
- Recreation Ecology
- Human Dimensions of Natural Resource Management
- Wildlife Conservation and Habitat Management
- Watershed Management
- Hydrology and Soil Science

Individual programs of study and research are developed by students in consultation with their faculty advisor and graduate research committee to ensure timeliness and feasibility. Interdisciplinary research is encouraged. Prospective students should review the description of graduate courses offered in the program. Current and prospective students should visit the program's website for a current description of faculty interests and expertise.

Master of Science (M.S.) in Forestry

Admission

In addition to requirements set forth by the Graduate School, the Master of Science in Forestry admission requirements are:

1. A minimum grade point average of 2.7 or better is required for admission (*A* = 4.0) on the entire last undergraduate GPA earned at the time of application. A grade point average of 2.7 or higher is required for stipend eligibility when available.
2. The student is required to provide proof of proficiency in technical writing. Normally an expository essay is required to evaluate whether the student should have remedial grammar or writing courses.
3. Three letters of recommendation from former professors, employers, or other responsible individuals are required.
4. Each applicant must complete the statement of interest form. This form indicates the student's area of interest in forestry and the faculty member with whom the student desires to study. All correspondence should be directed to the program.
5. This program requires a nonrefundable $65 application fee that must be submitted with the application for Admissions to Graduate Study in Forestry. Applicants must pay this fee by credit card.

Retention and Completion Requirements

Upon the graduate student's arrival on campus, an advisory committee of three to five members of the graduate faculty will be formed to guide the student's work. The same committee will be responsible

for preparation and administration of thesis exams and also for the review and evaluation of the thesis. The advisory committee chair and at least one other member of the committee shall be members of the program. The other members may be selected from any academic unit including forestry.

Summary of Events

1. The deadlines for receipt of applications and official transcripts in the office of the Graduate School are: (a) the second Saturday in July for admission to the fall semester (b) the last Saturday in November for admission to the spring semester (c) the last Saturday in March for admission to the summer term.
2. Letters of recommendation should reach the Forestry program by the same dates as above.
3. Acceptance by the program and Graduate School should be announced one month or earlier than the desired matriculation date. A thorough review will be made by a screening committee of Forestry graduate faculty and the program adviser. Students rejected for admission will also be notified.
4. Registration for first semester's work after student's acceptance by the program.
5. Appointment of advisory committee chair, written plan for course work, and selection of tentative thesis areas all within first two months of residence.
6. Preparation of formal written thesis outline and preparation of research proposal by the eighth week of the second semester.
7. Completion of final, typed or reproduced review copies of thesis and submission of advisory committee at least three weeks in advance of oral defense of thesis.
8. Oral exam to be followed by completion of required approval forms. If thesis requires modifications, this should be accomplished immediately to reach the graduate dean's office in due time set by the Graduate School. Electronic copies of the completed and approved thesis are submitted to the Graduate School. Electronic copies should also be provided to all committee members. Additional copies may be required for projects sponsored by outside agencies.

Assistantships and Fellowships

Research assistantships are sponsored each year by the McIntire-Stennis Cooperative Forest Research Act and through several externally funded research projects. Teaching assistantships funded by the School of Agricultural Sciences are also available.

In addition to general awards made through the Graduate School, stipends for research studies are available from the U.S.D.A. Forest Service, the U.S. Department of Interior, other federal and state agencies, and private corporations.

Requirements

Since the normal minimum requirement for graduation is 32 credit hours, the completion of degree work for students holding assistantships should be accomplished within four semesters (including summer) which is also the normal maximum span for financial aid.

Per Graduate Program Guidelines for the Master of Science degree in Forestry at least 16 credit hours of the approved academic program must consist of 500 level courses; and, at least three of the 500 level courses must be formally structured.

The student must attain a grade of B or better for all courses specifically required in the student's academic program and which are offered by the Forestry program.

To gain experience, graduate students are expected to assist in the classroom or laboratory for at least one academic semester (20 hours per week) during their tenure with the Forestry program. The remaining semesters will also involve either research or teaching at the rate of 20 hours a week.

Staff

In addition to the faculty listed in the Graduate School Catalog, several adjunct professors may also hold appointments in the Forestry program. These professors are assigned to various natural resource agencies and can serve on graduate guidance committees.

Research Facilities

SIUC is well endowed with a number of different forest types and agricultural land which are available to the Forestry program for teaching and research purposes. In particular, we are conducting or planning research and demonstration programs on forest plots and experimental fields of the 3,000 acres of the University and its experimental farms. We also have access to wooded lands of the 600 acres of the Touch of Nature Outdoor Education Center and other forests.

Through various memoranda of understanding and special use permits we have use of forested lands and plots on the 43,000 acres of the Crab Orchard Wildlife Refuge, the 270,000 acres of the Shawnee National Forest, and the 4,000 acres of the Trail of Tears State Forest, all of which are within an hour's drive of Carbondale. A number of research projects are also ongoing on private lands in southern Illinois. Graduate research has also been conducted throughout the country through agreements with the U.S. Forest Service Experiment Stations and the U.S. Department of Interior, as well as internationally.

A variety of laboratories are housed within the School of Forestry and Horticulture, including those specializing in historical ecology and fire, GIS, human dimensions, and water quality. A research greenhouse operated at the Tree Improvement Center on the western side of the campus is in operation for research and graduate teaching. Greenhouses and growth chamber facilities in the agriculture greenhouses in conjunction with the other programs in the College of Agricultural, Life, and Physical Sciences are also available.

Forestry Courses

FOR401 - Fundamentals of Environmental Education (Same as AGRI 401 and REC 401) A survey course designed to help education majors develop an understanding of environmental education principles and teaching both inside and outside the classroom. Prerequisite: ten hours of biological science or ten hours of recreation and/or education, or consent of instructor. Course fee: $25. Credit Hours: 3

FOR402 - Wildland Hydrology Fundamentals of hydrology as related to forest and wildland water resources will be emphasized. Considerations will include the hydrologic cycle with emphasis on soil and groundwater regimes, evapotranspiration, surface and subsurface runoff, and the quantity and timing of water yield. Credit Hours: 3

FOR403 - Agroforestry This course examines the deliberate integration of forestry and related land management practices within agricultural landscapes, primarily addressing wildlife habitat, water quality, crop yield, and animal production enhancement and sustainability. Emphasis is placed on systems successfully implemented in North America, particularly the Midwest, but international examples will also be discussed. Credit Hours: 3

FOR405 - Forest Management for Wildlife This course is designed to familiarize students with a scientific understanding of the theory and practice of forest management for wildlife. Students will gain knowledge of basic forestry management principles as they apply to wildlife; ecology and management of different types of forests for wildlife; and habitat requirements of forest birds, mammals, and herps and applicable forest management techniques. Credit Hours: 3

FOR409 - International Forest Resources Decision-Making Examines management planning decision-making for multiple-use forests around the world. Reviews concepts useful for analyzing flow-resource problems, emphasizing systems approaches, introduces use of modern quantitative and qualitative methods to evaluate resource use alternatives. Case studies from around the world. Prerequisite: FOR 411. Credit Hours: 3

FOR411 - Forest Resources Economics Application of micro and macro economics principles to forest timber and non-timber production: capital theory, benefit-cost analysis; and economics of conservation. Prerequisites: ABE 204 or ECON 240, FOR 310 and FOR 351, or consent of instructor. Credit Hours: 3

FOR412 - Tree Improvement Basic theories and techniques of obtaining genetically superior trees for forest regeneration. Restricted to 4th Year standing. Credit Hours: 2

FOR415 - Prescribed Burn Planning FOR 415 provides a practical overview of planning, mapping, and execution of prescribed burns for ecological restoration efforts in woodland and prairie habitats or other wildland areas. Emphasis will be placed on writing burn prescriptions, laying out burn units, planning and executing burns, and long term monitoring efforts. This will be accomplished with weekly on-line reading assignments followed by Friday morning field trips to visit burn units, prepare control lines, record weather observations, and conduct fuel model assessments. Course fee: $45. Offered during spring semesters. Prerequisite: FOR 315-Fire in Wildland Management. Consent of instructor. Credit Hours: 2

FOR416 - Forest Resource Management The application of business procedures and technical forestry principles to manage forest properties. Emphasis on integrated resource management for tangible and intangible benefits. Prerequisite: FOR 351, completion of Forest Resource summer camp series or consent of instructor. Course fee: $25. Credit Hours: 4

FOR417 - Forest Planning Forest planners and policy makers are often challenged by questions, such as what to manage forests for, and how to manage forests to achieve the desired goals. This course is designed to introduce students to the evolving theoretical perspectives in the field of planning, from rational-comprehensive planning to communicative action planning, and their influence on forest decision-making within the US as well as internationally. The course will also explore a broad range of approaches to forest management, ranging from community forestry to emerging approaches, such as climate-smart forestry, forest-based adaptation, and adaptive forest governance that promise to enhance the sustainable management of forests in a future that is characterized by climate change impacts and other forces of change. Credit Hours: 3

FOR418 - Marketing of Forest Products The role of marketing in the forest industries; review of economic principles; product policy, planning the product line, pricing, marketing channels, marketing programs, marketing organization, and marketing research as influences on the marketing of lumber, wood products, pulp, and paper. Taught in alternate years. Prerequisite: FOR 411 or consent of instructor. Credit Hours: 2

FOR420 - Park and Wildlands Management The management of state and federal parks and recreation areas. A systems approach toward management and decision-making will be emphasized. Course fee: $50. Credit Hours: 3

FOR421 - Recreation Land-Use Planning Principles and methods for land-use planning of park and recreation environments with emphasis on human dimensions of natural resource research. Focus on planning process and types of information to gather and organize. Application in group field projects. Prerequisite: FOR 220, 420, or consent of instructor. Course fee: $25. Credit Hours: 3

FOR423 - Environmental Interpretation (Same as AGRI 423 and REC 423) Principles and techniques of natural and cultural interpretation. Two hours lecture, three hours laboratory. Prerequisite: ten hours biological science or ten hours of recreation. Field Trip Transportation/Equipment fee: $40. Credit Hours: 3

FOR425 - Habitat Management for Wild Game Introduction to the field of habitat management for wild game species in the Central Hardwood Forest Region of North America. Special emphasis will be placed on providing and manipulating the essential habitat requirements for trophy game including deer, turkey, and upland birds. A holistic approach to habitat management will be emphasized to identify how management of wild game habitat can satisfy other landowner goals and objectives. Restricted to 3rd Year standing or above or permission of instructor. Credit Hours: 3

FOR428 - Urban Forestry An introduction to principles and practices useful in the management of trees and forests in populated settings. Emphasis is placed on the development of comprehensive management strategies consistent with the biological, physical, economic and social constraints of the urban environment. Credit Hours: 2

FOR429 - Watershed Management Field Laboratory A field intensive laboratory course focused on hydrological and biological methods used to manage watersheds and assess watershed health. Laboratory topics include stream gauging, soil water and ground water sampling, channel morphology,

stream benthos measurements, and water quality analysis of stream and lake ecosystems. Field Trip Transportation/Equipment fee: $30. Credit Hours: 2

FOR430 - Wildland Watershed Management Emphasis is placed on the principles, technical problems, procedures, alternatives, and consequences encountered in managing wildland watersheds for the production of quality water in harmony with other uses. Credit Hours: 3

FOR431 - Regional Silviculture This course examines prevailing management practices within each of the major forested regions of the United States. The course is primarily intended for students interested in wildlife habitat, wood production, or restoration. Emphasis is placed on understanding how underlying soils, silvics, climate, biotic agents, social forces, and past uses drive forestry differentially across the country. Prerequisite/Co-Requisite: FOR 310, or consent of instructor. Credit Hours: 3

FOR451 - Wildlife Habitat and Populations This course is designed to familiarize students with a scientific understanding of major topics in wildlife ecology and management, with a special focus on Forestry majors and natural resource inventory techniques. Students will gain knowledge of the history of the field of wildlife management, primary wildlife management principles and practices, ecological theory pertinent to wildlife populations and habitat, and current important issues/problems regarding wildlife management and natural resource inventory. Credit Hours: 3

FOR452 - Forest Soils Forest Soils is designed to give the student a more comprehensive in-depth study of the patterns and processes of soil formation and their relation to forest productivity. Upon completion of the course, student will be familiar with soil/plant interactions, water relationships, and forest soil management for sustainable productivity and environmental quality. This course provides a sound basis for learning basic soils concepts specifically related to forest ecosystems which are beneficial to Forestry majors and those majoring/minoring in Soil Science or related natural science disciplines. Prerequisite: FOR 352 or consent of instructor. Field Trip Transportation/Equipment fee: $25. Credit Hours: 3

FOR452L - Forest Soils Laboratory Companion laboratory for FOR 452. Emphasis is on methods to characterize and evaluate the chemical, physical, and biological properties of forest soils. Field Trip Transportation/Equipment fee: $25. Offered spring semester, even years. Credit Hours: 2

FOR453 - Environmental Impact Assessment in Forestry Methods of assessing the environmental impact of land-use systems on forest resources and assessing the impact of forest management systems on environmental quality are presented. Case studies culminating in the preparation of environmental impact statements are emphasized. Restricted to 4th Year standing in a natural resource major. Field Trip Transportation/Equipment fee: $25. Credit Hours: 2

FOR454A - Forest Ecology Field Studies-Boreal A study of forest communities, soils, and site conditions. Course requires a field trip of about 10 days. Each trip is worth three semester credits; a maximum of 6 credits may be applied toward degree. Restricted to 4th Year standing in natural resources or biological sciences, courses in tree identification, forest ecology, and soils. Special approval needed from the instructor. Field Trip Transportation/Equipment fee: $500. Credit Hours: 3

FOR454B - Forest Ecology Field Studies-Lake States A study of forest communities, soils, and site conditions. Course requires a field trip of about 10 days. Each trip is worth three semester credits; a maximum of 6 credits may be applied toward degree. Restricted to 4th Year standing in natural resources or biological sciences, courses in tree identification, forest ecology, and soils. Special approval needed from the instructor. Field Trip Transportation/Equipment fee: $500. Credit Hours: 3

FOR454C - Forest Ecology Field Studies-Southern Appalachians A study of forest communities, soils, and site conditions. Course requires a field trip of about 10 days. Each trip is worth three semester credits; a maximum of 6 credits may be applied toward degree. Restricted to 4th Year standing in natural resources or biological sciences, courses in tree identification, forest ecology, and soils. Special approval needed from the instructor. Field Trip Transportation/Equipment fee: $500. Credit Hours: 3

FOR454D - Forest Ecology Field Studies-Southern Pine A study of forest communities, soils, and site conditions. Course requires a field trip of about 10 days. Each trip is worth three semester credits; a maximum of 6 credits may be applied toward degree. Restricted to 4th Year standing in natural resources

or biological sciences, courses in tree identification, forest ecology, and soils. Special approval needed from the instructor. Field Trip Transportation/Equipment fee: $500. Credit Hours: 3

FOR454E - Forest Ecology: Southwestern Fuels Management A study of forest communities, soils, and disturbance factors in the Southwestern United States. Course requires a field trip of about 8 days. Each trip in the Forest Ecology Series is worth three semester credits; a max of 6 credits may be applied toward student's degree program. The Southwestern Fuels Management course focus is on learning about fuels inventory and the mapping software in use by most federal agencies when developing fuels project work across jurisdictions. A main deliverable of this course will be hands-on experience in writing a fuels project analysis for an ongoing district planning team, learning about fuels, modeling software, and field methods. Students will also have the opportunity to work with an on-site field forester and fire ecologist and visit national historic sites. Prerequisites: FOR 315 or concurrent enrollment and FOR 351 and consent of instructor. Field Trip Transportation/Equipment fee: $500. Credit Hours: 3

FOR460 - Forest Industries Analysis of raw material requirements, the processes and the products of forest industries. The environmental impact of each forest industry will also be discussed. Credit Hours: 2

FOR470 - Wilderness Management, Policy, and Ethics Study of current management philosophy and practice in America's wilderness. Analysis of current wilderness policy and its historical evolution. Discussion of the evolution of the wilderness idea and the individuals that have influenced it. Weekend field trip required. Offered alternate (even) years. Restricted to 4th Year standing. Field Trip Transportation/Equipment fee: $80. Credit Hours: 2

FOR480 - Natural Resource Conflict Management Examines the role and methods of stakeholders in influencing natural resource policies. Emphasis on applied methods, techniques and strategies for conflict resolution, especially collaborative decision making and persuasion theory. Restricted to 3rd Year standing or consent of instructor. Credit Hours: 3

FOR486 - Invasive Plant Ecology and Management (Same as CSEM 486, PSAS 486) Ecology and evolution of invasive plant species, with a focus on land management, including characteristics and biology, introduction and spread, population dynamics, community impacts and ecological interactions, and invasive plant evolution and adaptation, as well as management techniques and considerations, including biological, chemical, and mechanical control. Prerequisite: BIOL 307 or consent of instructor. Restricted to 3rd Year standing. Credit Hours: 3

FOR494A - Practicum-Forest Environmental Assessment Supervised practicum in a professional setting. Emphasis on administration, supervision, teaching and program leadership in community, school, park, forest, institution, and public or private agencies. Students should enroll according to their curriculum specialization. Special approval needed from the instructor. Credit Hours: 1-6

FOR494B - Practicum-Outdoor Recreation Resource Management Supervised practicum in a professional setting. Emphasis on administration, supervision, teaching and program leadership in community, school, park, forest, institution, and public or private agencies. Students should enroll according to their curriculum specialization. Special approval needed from the instructor. Credit Hours: 1-6

FOR494C - Practicum-Forest Resources Management Supervised practicum in a professional setting. Emphasis on administration, supervision, teaching and program leadership in community, school, park, forest, institution, and public or private agencies. Students should enroll according to their curriculum specialization. Special approval needed from the instructor. Credit Hours: 1-6

FOR500 - Principles of Research Research philosophy, approaches to research; theory, hypotheses inference, and predicting; problem identification, project development and organization; methods of data collection, analysis and presentation; drawing conclusions and organizing results. Credit Hours: 2

FOR501 - Graduate Seminar Presentation and critiques of current research project of faculty, graduate student and selected resource persons. Credit Hours: 1

FOR502 - Advanced Watershed Hydrology and Management A study of current issues relating to hydrology and the management of water resources in forested and mixed land-use watersheds. Readings, discussions and projects will focus on research and management topics in water quality and

quantity at regional, national and international levels. Prerequisite: FOR 402 or FOR 430 or equivalent or consent of instructor. Credit Hours: 3

FOR504 - Tree Physiology Concepts and Applications in Forest Management A study of physiological concepts and attributes of trees that underlies growth, ontogeny, and reproduction in the context of applied forest management. Physiological concepts will be presented and discussed in a framework that relates their influence on forest stand management activities such as establishing natural regeneration, tree planting, and other silvicultural processes in native, plantation and urban forests as well as forest tree and stand responses to disturbance, and the development and maintenance of old growth. Students who have achieved a passing grade in FOR 404 are not eligible to take this course. Prerequisite: PLB 200, or FOR 201, or FOR 331 or a plant physiology course. Credit Hours: 3

FOR506 - Advanced Landscape Ecology Review and evaluation of current research and concepts in landscape ecology management. Principles of landscape ecology in the context of forested systems will be presented and discussed. Emphasis on how spatial heterogeneity and human activities influence landscape patterns. Students who have taken FOR 406 are ineligible to enroll. Prerequisite: G.I.S. course or consent of instructor. Credit Hours: 3

FOR508 - Historical Ecology Introduction to the basic concepts and foundations of historical ecology, a discipline which joins traditional ecology with an investigation of human landscape transformation. Emphasis is placed on the interdisciplinary approach to historical ecology with readings in pollen analysis, dendrochronology, land-use history, archival and historical sources, and traditional vegetation surveys and reconstructions. Offered alternate years. Prerequisite: 300 level plant ecology course or equivalent or consent of instructor. Field trip cost approximately $35. Credit Hours: 2

FOR510 - Advanced Silviculture: Landscape Rehabilitation Current and emerging issues in silviculture and landscape-scale natural resource and agricultural sustainability are addressed at the individual manager/farmer or small community level. Case studies consider underlying physical and biological principles underlying successful rehabilitation practices across a wide range of social contexts and physical landscapes. Experimental methodologies and their application to management problems are critiqued. Water, grazing, food crop, wildlife/biodiversity conservation, and biofuels are emphasized with accommodations for students with related interests. This course is intended for students with undergraduate training or practical backgrounds in natural resource management or agriculture and who are seeking to integrate these disciplines toward developing actionable solutions. Special approved needed from the instructor. Credit Hours: 2

FOR511 - Advanced Forest Resources Economics Application of microeconomic, macroeconomic and capital theory to forest resource problems; introductory econometric methods; long range supply and demand projections; international forest economics and policy problems decision theory in forest resource management. Offered alternate years. Prerequisite: FOR 411 or equivalent or consent of instructor. Credit Hours: 2

FOR512 - Tree Selection and Breeding Quantitative methods of describing variation patterns of trees, testing genetic and environmental effects and interactions and evaluations of tree improvement program. Prerequisite: FOR 412 or consent of instructor. Credit Hours: 2

FOR515 - Advanced Urban Ecosystem Management An examination of concepts and processes associated with urban environments. Physical, chemical, and biological stresses associated with land use change and urban sprawl will be discussed and presented with a focus on water resources. Class discussion, readings, and projects will concentrate on current research in the urban environment. Restricted to graduate standing or consent of instructor. Credit Hours: 3

FOR516 - Advanced Forest Management Case studies in forest land management, management planning, utilizing computer programming, CFI and TSI role in long range management planning. Credit Hours: 2

FOR520 - Advanced Park Planning Study of nature and functions of the recreation environmental planning process in theoretical and policy terms. Types of plans at local, regional and state levels. Evaluation of different types of planning approaches and their utility in particular situations. Offered alternate years. Prerequisite: FOR 421 or consent of instructor. Credit Hours: 2

FOR521 - Recreation Behavior in Wildlands Environments Review of sociological and psychological theories relevant to outdoor recreation planning; management alternatives. Review of current behavior research in outdoor recreation. Application of behavioral concepts to recreation planning and administration. Offered alternate years. Credit Hours: 2

FOR523 - Advanced Resource Interpretation Survey of theories and methods relating to resource interpretation planning and practice resulting from research in communication, education and marketing. Examines case studies and existing issues current to the profession of interpretation. Stresses relationship between theory and application. Prerequisite: FOR 423 or consent of instructor. Offered alternate years. Credit Hours: 2

FOR528 - Urban Tree Management Establishment and maintenance of trees as beneficial components of urban environments. Tree functionality is addressed from biological, social, and economic opportunities and constraints commonly associated with cities and towns. Management of trees and wooded areas within ecological urban landscapes is addressed from the perspective of multiple constituencies. This course is primarily intended to be taken as part of the ecological urban landscapes graduate program and is offered Online Only. May be taken as a substitute for FOR 428. Students who have achieved a passing grade in FOR 428 are not eligible to take this course. Credit Hours: 3

FOR530 - Forest Site Evaluation A discussion of the factors affecting site quality and their use in present site evaluation methods. Lectures will draw upon recently published scientific literature as well as forest research data collected and analyzed for southern Illinois forests. Laboratories will include sampling of forest sites and stands with subsequent analysis of data using graphic and statistical techniques and a computer to develop site evaluation models. Prerequisite: BIOL 307 or consent of instructor. Cost: $20. Credit Hours: 2

FOR531 - Disturbance Ecology Provide a historical overview and current perspective on major topics in forest ecology including natural disturbance, gap and patch dynamics, and relevant restoration ecology techniques. This is accomplished through a critical examination of the literature through reading, group discussions, and field trips. Two to three field trips will be organized during the semester to observe the effects of natural disturbance with an approximate total cost of $25 per student. Offered alternate years. Credit Hours: 2

FOR550 - Hierarchical Modeling in Ecology: Introduction to Bayesian Analysis Based explicitly in R, this course demonstrates an applied approach to Bayesian inference of hierarchical models. Side-by-side comparison of Classical and Bayesian analyses will be illustrated. Course content will focus on problems in wildlife ecology but will likely translate to other disciplines. Graduate-level statistics and R experience is beneficial but not required. Credit Hours: 2

FOR551 - Wildlife-Habitat Relationships Theory and practice of analyses pertaining to the study of wildlife-habitat relationships. Understanding of common data collection techniques in wildlife and forestry science. Use of computers, statistical programs, and other forms of data analysis. Ability to work on practical and applied problems in wildlife conservation. Special approval needed from the instructor. Credit Hours: 3

FOR561 - Spatial Ecology Current and emerging topics in spatial ecology that serve to confront conservation and management issues in natural resources. This course will introduce students to the study of how space directly and indirectly affects ecological processes that drive biodiversity and ecosystem functioning. Readings cover topics from quantifying spatial patterns to evaluating ecological responses to space. Offered spring semester of even years. Restricted to graduate standing or consent of instructor. Credit Hours: 2

FOR585 - Human Dimensions of Natural Resource Management Multidisciplinary study of influences and constraints on human-renewable natural resource interactions. Readings, discussion and problem solving to enhance appreciation of human dimensions as an integral component of natural resource management. Emphasis on diverse perspectives on forest, fisheries, and wildlife; conceptual frameworks and research methodologies. Offered alternate (odd) years. Credit Hours: 3

FOR588 - International Graduate Studies University residential graduate program abroad. Prior approval by the program is required both for the nature of program and the number of hours of credit. Credit Hours: 1-6

FOR590 - Readings in Forest Resources Intensive consideration is given to current practices and problems in forestry. Special approval needed from the instructor. Credit Hours: 1-4

FOR591A - Directed Studies in Forest Resources-Dendrology Intensive study of disciplines fundamental to forestry. Study of the identification of native and exotic trees. Special approval needed from the instructor. Credit Hours: 1-4

FOR591B - Directed Studies in Forest Resources-Forest Autecology Intensive study of disciplines fundamental to forestry. Study of the physiology of individual tree species in relation to their environment. Special approval needed from the instructor. Credit Hours: 1-4

FOR591C - Directed Studies in Forest Resources-Forest Community Ecology Intensive study of disciplines fundamental to forestry. Study analysis and integration of tree growth, forest structure and classification in relation to climate/edaphic factors as an ecological basis for forest management. Special approval needed from the instructor. Credit Hours: 1-4

FOR591D - Directed Studies in Forest Resources-Forest Measurements Intensive study of disciplines fundamental to forestry. Study of measurement, statistical and data processing concepts; volume, growth, yield of forest products and methods of sampling forest resources. Special approval needed from the instructor. Credit Hours: 1-4

FOR591E - Directed Studies in Forest Resources-Forest Recreation Intensive study of disciplines fundamental to forestry. Study of principles and methods for land-use planning of park and recreation environments. Special approval needed from the instructor. Credit Hours: 1-4

FOR591F - Directed Studies in Forest Resources-Silviculture Intensive study of disciplines fundamental to forestry. Study of concepts and techniques utilized in the silvicultural treatment of forests. Special approval needed from the instructor. Credit Hours: 1-4

FOR591G - Directed Studies in Forest Resources-Wildland Fire Management Intensive study of disciplines fundamental to forestry. Study of all aspects of fire as a phenomenon in wildland management. Special approval needed from the instructor. Credit Hours: 1-4

FOR591H - Directed Studies in Forest Resources-Forest Soils Intensive study of disciplines fundamental to forestry. An introduction to the characterization and fundamental concepts of forest soils and their relationships to forest communities and forest management practices. Emphasis is on the chemical, biological, and physical properties of forest soils as related to forests and forest management. Credit Hours: 1-4

FOR591I - Directed Studies in Forest Resources-Mapping and GIS Integrate the use of mapping, orthophotographs, and field information to evaluate resources in the development of land management plans. Topics covered range from orthophoto interpretation, to GIS database management, and vegetation mapping. Course includes classroom presentation, field trips, and laboratory exercises. $50 Field trip fee. Credit Hours: 3

FOR593 - Individual Research Directed research in selected fields of forestry. Credit Hours: 1-4

FOR599 - Thesis A minimum of three and a maximum of eight hours to be counted toward a Master's degree. Credit Hours: 1-8

FOR601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

Forestry Faculty

Akamani, Kofi, Associate Professor, Ph.D., University of Idaho, 2011; 2011.

Carver, Andrew, Professor, Ph.D., Purdue University, 1998; 1998.

Groninger, John W., Professor, Ph.D., Virginia Polytechnic Institute and State University, 1995; 1997.

Holzmueller, Eric J., Professor, Ph.D., University of Florida, Gainesville, 2006; 2007.

Nielsen, Clayton K., Professor, Ph.D., Southern Illinois University Carbondale, 2001; 2009.

Park, Logan, Associate Professor, Ph.D., Virginia Polytechnic Institute and State University, 2009; 2010.

Pease, Brent, Assistant Professor, Ph.D., North Carolina State University, 2021; 2021.

Ruffner, Charles M., Professor, Ph.D., Pennsylvania State University, 1999. 1999.

Schoonover, Jon E., Professor, Ph.D., Auburn University, 2005; 2006.

Williard, Karl W. J., Professor, Ph.D., Pennsylvania State University, 1999; 1999.

Zaczek, James J., Professor, Ph.D., Pennsylvania State University, 1994; 1997.

Emeriti Faculty

Chilman, Kenneth C., Associate Professor, Emeritus, Ph.D., University of Michigan, 1972; 1973.

Mangun, Jean C., Associate Professor, Emeritus, Ph.D., Purdue University, 1991; 1996.

Phelps, John E., Professor, Emeritus, Ph.D., University of Missouri, 1980; 1990.

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