Division of Forestry and Natural Resources

Joseph McNeel, Division Director of Forestry and Natural Resources
email: joseph.mcneel@mail.wvu.edu

Degrees Offered

- Master of Science in Recreation, Parks, & Tourism Resources
- Master of Science in Wildlife & Fisheries Resources
- Master of Science in Forestry with two Areas of Emphasis: Forest Resource Management or Wood Science & Technology
- Doctor of Philosophy in Forest Resources Science with four Areas of Emphasis: Forest Resource Management; Recreation, Parks, & Tourism Resources; Wildlife & Fisheries Resources; and Wood Science & Technology

The Division of Forestry and Natural Resources offers three master of science degree programs in recreation, parks and tourism resources, wildlife and fisheries resources, and forestry. Students wishing to pursue a master of science emphasizing forest resources management or wood science and technology should apply for admission to the master of science in forestry. A student seeking admission to work toward the degree of doctor of philosophy in forest resources science in the Davis College of Agriculture, Natural Resources, and Design may choose from one of the following Areas of Emphasis as their major field of study: forest resources management; recreation, parks, and tourism resources; wood science and technology; or wildlife and fisheries resources. Within these major fields of study, specialization is limited only by the range of competencies in the graduate faculty.

FACULTY

DIRECTOR
- Joseph F. McNeel - Ph.D. (Virginia Tech)
  Professor, Forest Engineering, Forest Operations

PROGRAM COORDINATORS
- John R. Brooks - Ph.D. (University of Georgia)
  Forest Resource Management, Professor, Forest Biometrics
- James T. Anderson - Ph.D. (Texas Tech)
  Wildlife and Fisheries Resources, Professor, Fisheries and Aquatic Ecology, Fish Management, Tropics Ecology
- David A. Smaldone - Ph.D. (University of Idaho)
  Recreation, Parks, and Tourism; Associate Professor, Environmental Interpretation and Education
- David DeVallance - Ph.D. (Oregon State University)
  Wood Science and Technology, Associate Professor, Biocomposites, Bioenergy, and Material Processing

PROFESSORS
- James T. Anderson - Ph.D. (Texas Tech University)
  Wildlife and Fisheries, Wildlife Ecology and Management
- Benjamin E. Dawson-Andoh - Ph.D. (University of British Columbia)
  Wood Science, Wood Chemistry, Wood Preservation
- John W. Edwards - Ph.D. (Clemson University)
  Wildlife and Fisheries, Endangered Species Ecology and Management, Forest Wildlife/Habitat Relationships
- Kyle J. Hartman - Ph.D. (University of Maryland)
  Wildlife and Fisheries, Fisheries and Aquatic Ecology, Fish Management, Trophic Ecology
- David W. McGill - Ph.D. (Pennsylvania State University)
  Forest Resources Management, Extension Specialist, Forest Resources, Non-industrial Private Forestry
- J. Todd Petty - Ph.D. (University of Georgia)
  Wildlife and Fisheries, Fisheries and Stream Ecology
- Steven W. Selin - Ph.D. (University of Oregon)
  Recreation, Parks, and Tourism; Human Dimensions of Natural Resources, Collaborative Stewardship
- Robert C. Whitmore - Ph.D. (Brigham Young University)
  Wildlife and Fisheries, Wildlife Management, Avian Ecology, Quantitative Ecology

ASSOCIATE PROFESSORS
- Kathryn G. Arano - Ph.D. (Mississippi State University)
Forest Resources Management, Forest Economics
• Robert C. Burns - Ph.D. (Pennsylvania State University)
  Recreation, Parks, and Tourism; Leisure Studies
• Jinyang Deng - Ph.D. (University of Alberta)
  Recreation, Parks, and Tourism; Recreation and Leisure Studies

ASSISTANT PROFESSORS
• Gregory A. Dahle - Ph.D. (Rutgers University)
  Forest Resources Management, Aboriculture
• David B. DeVallance - Ph.D. (Oregon State University)
  Wood Science, Sustainable Product Development
• Kudzayi Maumbe - Ph.D. (Michigan State University)
  Recreation, Parks, and Tourism; Tourism Marketing
• Gloria S. Oporto - Ph.D. (University of Maine - Orono)
  Wood Science, Wood-based Composites and Bioproducts
• Kaushlendra Singh - Ph.D. (University of Georgia)
  Wood Science, Biofuel and Bioenergy Production
• Benjamin D. Spong - Ph.D. (Oregon State University)
  Wood Science, Extension Specialist, Forest Operations
• Anthony C. Tomkowski - M.S.F. (West Virginia University)
  Forest Resources Management, Forestry, Fisheries, Forest Water Quality
• Amy B. Welsh - Ph.D. (University of California - Davis)
  Wildlife and Fisheries, Ecology, Conservation Genetics
• Nicolas P. Zegre - Ph.D. (Oregon State University)
  Forest Resources Management, Forest Hydrology
• Mo Zhou - Ph.D. (University of Wisconsin)
  Forest Resources Management, Forest Economics

RESEARCH ASSISTANT PROFESSORS
• Todd E. Katzner - Ph.D. (Arizona State University)
  Wildlife and Fisheries Resources, Extension Specialist
• Stuart A. Moss - Ph.D. (West Virginia University)
  Forest Resources Management, Forest Business Management
• James S. Rentch - Ph.D. (West Virginia University)
  Forest Resources Management, Forest Ecology and Management

TEACHING ASSISTANT PROFESSOR
• George T. Merovich - Ph.D. (University of Arizona)
  Wildlife and Fisheries, Fisheries and Aquatic Ecology, Quantitative Ecology

ADJUNCT FACULTY
• Kelly Bricker - Ph.D. (Pennsylvania State University)
  Recreation, Parks, and Tourism
• Adam E. Duerr - Ph.D. (University of Vermont)
  Wildlife and Fisheries
• Nathan J. Harlan - M.A. (Geneva College)
  Recreation, Parks, and Tourism
• Patricia M. Mazik - Ph.D. (Memphis State University)
  Wildlife Fisheries
• Gary Miller - Ph.D. (Virginia Tech)
  Forest Resources Management
• Margaret Pings - M.S. (West Virginia University)
  Recreation, Parks, and Tourism
• Steven J. Storck - Ph.D. (West Virginia University)
  Recreation, Parks, and Tourism
• Stuart A. Welsh - Ph.D. (West Virginia University)
  Wildlife and Fisheries
Admission Requirements for M.S.

Admission requirements for applicants are similar to the requirements for admission to the Davis College of Agriculture, Natural Resources, and Design. The Master of Science degree is offered in four programs: forestry (forest resources management or wood science and technology emphasis), wildlife and fisheries resources; and recreation, parks, and tourism resources. In nearly every case, the program of study will require two years of on-campus residence.

Degrees Offered:

- Master of Science in Forestry with two Areas of Emphasis in Forest Resources Management and Wood Science and Technology
- Master of Science in Recreation, Parks, and Tourism Resources
- Master of Science in Wildlife and Fisheries Resources
Additional Program

Peace Corps Master's International Program: The Division of Forestry and Natural Resources is also an active participant in the Peace Corps Master’s International program. The vision of the WVU-PCMI is to prepare graduate students with the advanced coursework, research experience, and professional guidance needed to succeed in Peace Corps service and in careers related to environmental science and policy, forestry and natural resource management, and sustainable development. For more information go to: http://peacecorps.davis.wvu.edu/.

Curriculum Requirements for Ph.D.

Curriculum requirements for all Ph.D. candidates include a block of graduate courses in the major field, which will constitute a comprehensive review of the significant knowledge in that field and a block of graduate courses in a minor field of study. A minimum of sixty semester hours beyond the bachelor’s degree and exclusive of the dissertation is required.

Dissertation and Final Examination

The research work for the doctoral dissertation must show a high degree of scholarship and must present an original contribution to the field of forest and natural resources science. In addition to coursework and the dissertation, the candidate is required to pass a qualifying examination and a final examination.

FOREST MANAGEMENT COURSES

FMAN 512. Silvtral Prc Hrdwd Forest Types. 3 Hours.
PR: FMAN 311. Designing proper silvicultural systems for managing Appalachian hardwood stands; reconstructing stand histories, recognizing problems, and prescribing appropriate silvicultural treatment.

FMAN 540. Current Issues-Forest Managmnt. 3 Hours.
PR: Consent. Analysis of environmental issues in forest management and current controversies surrounding the management of forested lands. Emphasis on traditional and ecosystem-based forest management policy, philosophy, and practices.

FMAN 591A-Z. Advanced Topics. 1-6 Hours.
PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses.

FMAN 593A-Z. Special Topics. 1-6 Hours.
A study of contemporary topics selected from recent developments in the field.

FMAN 611. Advanced Forest Ecology. 3 Hours.
PR: FMAN 212 or equivalent; FMAN 311. Ecological relationships in forests with emphasis on biogeochemical cycles.

FMAN 631. Forest Stand Dynamics. 3 Hours.
PR: Undergraduate courses in ecology or silviculture, and statistics. Examination of the processes causing temporal and spatial changes in communities of trees including: stand establishment, growth, competition, disturbance and mortality. Labs focus on the quantification of stand development patterns.

FMAN 640. Advanced Forest Biometrics. 3 Hours.
PR: FMAN 222 and STAT 511. Review and application of mathematical and statistical models used in forest volume, taper and height estimation procedures.

FMAN 641. Forest Growth & Yield Modeling. 3 Hours.
PR: FMAN 640 Review and application of mathematical and statistical models used in forest growth and yield modeling.

FMAN 644. Forest Growth/Yield Modeling. 3 Hours.
PR: FMAN 640. Review and application of mathematical and statistical models used in forest growth and yield modeling.

FMAN 650. Forest Valuation & Investment. 3 Hours.
Asset valuation concepts, with special emphasis on forests. Financial analyses of forest operations. Concepts and strategies in forestland investment and portfolio management.

FMAN 693A-Z. Special Topics. 1-6 Hours.
A study of contemporary topics selected from recent developments in the field.

FMAN 695. Independent Study. 1-6 Hours.
Faculty-supervised study of topics not available through regular course offerings.

FMAN 697. Research. 1-15 Hours.
PR: Consent. Research activities leading to thesis, problem report, research paper or equivalent scholarly project, or a dissertation. (Grading may be S/U.)

FMAN 790. Teaching Practicum. 1-3 Hours.
PR: Consent. Supervised practice in college teaching of forest management. Note: This course is intended to insure that graduate assistants are adequately prepared and supervised when they are given college teaching responsibility. It will also present a mechanism for students not on assistantships to gain teaching experience. (Grading will be S/U.)
FMAN 791A-Z. Advanced Topics. 1-6 Hours.
PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses.

FMAN 792A-Z. Directed Study. 1-6 Hours.
Directed study, reading, and/or research.

FMAN 793A-Z. Special Topics. 1-6 Hours.
A study of contemporary topics selected from recent developments in the field.

FMAN 794A-Z. Seminar. 1-6 Hours.
Special seminars arranged for advanced graduate students.

FMAN 795. Independent Study. 1-6 Hours.
Faculty supervised study of topics not available through regular course offerings.

FMAN 796. Graduate Seminar. 1 Hour.
PR: Consent. Each graduate student will present at least one seminar to the assembled faculty and graduate student body of his or her program.

FMAN 797. Research. 1-15 Hours.
PR: Consent. Research activities leading to thesis, problem report, research paper or equivalent scholarly project, or a dissertation. (Grading may be S/U.)

FMAN 798. Dissertation. 1-6 Hours.
PR: Consent. This is an optional course for programs that wish to provide formal supervision during the writing of student reports (698), or dissertations (798). Grading is normal.

FMAN 799. Graduate Colloquium. 1-6 Hours.
PR: Consent. For graduate students not seeking coursework credit but who wish to meet residency requirements, use of the University’s facilities, and participate in its academic and cultural programs. Note: Graduate students who are not actively involved in coursework or research are entitled, through enrollment in their department’s 699/799 Graduate Colloquium to consult with graduate faculty, participate in both formal and informal academic activities sponsored by their program, and retain all of the rights and privileges of duly enrolled students. Grading is S/U; colloquium credit may not be counted against credit requirements for masters programs. Registration for one credit of 699/799 graduate colloquium satisfies the University requirement of registration in the semester in which graduation occurs.

FORESTRY COURSES

FOR 525. Vegetation of West Virginia. 3 Hours.
PR: FOR 205. Basics of plant taxonomy and community ecology, use of technical field keys, study of selected plant families, field trips to unusual and/or important plant communities and forest types in West Virginia.

FOR 575. Forest Soils:Ecology-Managment. 3 Hours.
PR: AGRN 410 or AGRN 425 or consent. Properties, nutrient cycling processes, and sustainable management of forest soils, with examples from the most important wood fiber producing regions of the U.S.: the southeast, Pacific Northwest, and the central hardwood forest.

FOR 590. Teaching Practicum. 1-3 Hours.
PR: Consent. Supervised practice in college teaching of forestry. Note: This course is intended to insure that graduate assistants are adequately prepared and supervised when they are given college teaching responsibility. It will also present a mechanism for students not on assistantships to gain teaching experience. (Grading will be S/U.)

FOR 591A-Z. Advanced Topics. 1-6 Hours.
PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses.

FOR 592A-Z. Directed Study. 1-6 Hours.
Directed study, reading, and/or research.

FOR 593A-Z. Special Topics. 1-6 Hours.
A study of contemporary topics selected from recent developments in the field.

FOR 594A-Z. Seminar. 1-6 Hours.
Special seminars arranged for advanced graduate students.

FOR 595. Independent Study. 1-6 Hours.
Faculty supervised study of topics not available through regular course offerings.

FOR 650. Econ,Environ & Education in WV. 3 Hours.
This course is designed for K-12 classroom teachers with little previous background in economics. We introduce the principles of economics using the WV forest products industry to provide examples.

FOR 670. Human Dimnsions-Natl Rsrc Mang. 3 Hours.
PR: Grad standing. This course applies social science theory and methods to solving natural resource management problems.

FOR 691A-Z. Advanced Topics. 1-6 Hours.
PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses.
FOR 693A-Z. Special Topics. 1-6 Hours.
A study of contemporary topics selected from recent developments in the field.

FOR 696. Graduate Seminar. 1 Hour.
PR: Consent. Each graduate student will present at least one seminar to the assembled faculty and graduate student body of his or her program.

FOR 697. Research. 1-15 Hours.
PR: Consent. Research activities leading to thesis, problem report, research paper or equivalent scholarly project, or a dissertation. (Grading may be S/U).

FOR 698. Thesis. 1-6 Hours.
PR: Consent. This is an optional course for programs that wish to provide formal supervision during the writing of student reports (698), or dissertations (798). Grading is normal.

FOR 699. Graduate Colloquium. 1-6 Hours.
PR: Consent. For graduate students not seeking coursework credit but who wish to meet residency requirements, use of the University’s facilities, and participate in its academic and cultural programs. Note: Graduate students who are not actively involved in coursework or research are entitled, through enrollment in their department’s 699/799 Graduate Colloquium to consult with graduate faculty, participate in both formal and informal academic activities sponsored by their program, and retain all of the rights and privileges of duly enrolled students. Grading is S/U, colloquium credit may not be counted against credit requirements for masters programs. Registration for one credit of 699/799 graduate colloquium satisfies the University requirement of registration in the semester in which graduation occurs.

FOR 791A-Z. Advanced Topics. 1-6 Hours.
PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses.

FOR 793A-Z. Special Topics. 1-6 Hours.
A study of contemporary topics selected from recent developments in the field.

FOR 797. Research. 1-15 Hours.
PR: Consent. Research activities leading to thesis, problem report, research paper or equivalent scholarly project, or a dissertation. (Grading may be S/U).

RECREATION PARKS TOURISM RES COURSES

RPTR 570. Meanings of Place. 3 Hours.
Study of place as a psychological and social phenomenon with implications for community development, historic preservation, interpretation design, management, natural and cultural sustainability, and human well-being. (Equivalent to LARC 570.).

RPTR 608. Rec/Park Mngmt Practicum. 2-4 Hours.
PR: Consent. Field experience and conference in the study, analysis, and solution of management problems in private, commercial and governmental recreation and park organizations.

RPTR 680. Non-Personal Interpretation. 3 Hours.
This course focuses on the theoretical underpinnings and application of non-personal communication methods. This is a project-based course about interpreting historical, cultural, and natural resources.

RPTR 685. Personal Interpretation. 3 Hours.
This course focuses on the theoretical underpinnings and applications of personal communication methods. This is a project-based course about interpreting historical, cultural, and natural resources.

RPTR 691A-Z. Advanced Topics. 1-6 Hours.
PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses.

RPTR 693A-Z. Special Topics. 1-6 Hours.
A study of contemporary topics selected from recent developments in the field.

RPTR 697. Research. 1-15 Hours.
PR: Consent. Research activities leading to thesis, problem report, research paper or equivalent scholarly project, or a dissertation. (Grading will be S/U).

RPTR 714. Outdoor Recreation Behavior. 3 Hours.
This course explores the biophysical, psychological, social psychological, and sociological constructs that contribute to a contemporary, interdisciplinary understanding of outdoor recreation behavior. These concepts will be related to recreation resource management.

RPTR 715. Leisure and Recreation. 3 Hours.
PR: Consent. Study of leisure as a social phenomenon and its implications for recreation.

RPTR 718. Participatory Approaches NRM. 3 Hours.
This seminar style class focuses on the adoption of more participatory approaches to managing natural resources. Specific topics will include the use of advisory committees, mediating conflicts, facilitation skills, management partnerships and public participation plans.
RPTR 738. Tourism Planning. 3 Hours.
Use of natural settings; integration of tourism development with respect to environmental protection concerns. (Field trip required; some transportation and food costs.).

RPTR 752. Tourism & Natural Resourc Mktg. 3 Hours.
Apply the principles of marketing to tourism and natural resources emphasizing the convergence of increasing tourism demand and destination/resource competitiveness and sustainability.

RPTR 790. Teaching Practicum. 1-3 Hours.
PR: Consent. Supervised practice in college teaching of recreation, parks, and tourism resources. Note: This course is intended to insure that graduate assistants are adequately prepared and supervised when they are given college teaching responsibility. It will also present a mechanism for students not on assistantships to gain teaching experience. (Grading may be S/U.).

RPTR 791A-Z. Advanced Topics. 1-6 Hours.
PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses.

RPTR 792A-Z. Directed Study. 1-6 Hours.
Directed study, reading, and/or research.

RPTR 793A-Z. Special Topics. 1-6 Hours.
A study of contemporary topics selected from recent developments in the field.

RPTR 794A-Z. Seminar. 1-6 Hours.
Special seminars arranged for advanced graduate students.

RPTR 795. Independent Study. 1-9 Hours.
Faculty supervised study of topics not available through regular course offerings.

RPTR 796. Graduate Seminar. 1 Hour.
PR: Consent. Each graduate student will present at least one seminar to the assembled faculty and graduate student body of his or her program.

RPTR 797. Research. 1-15 Hours.
PR: Consent. Research activities leading to thesis, problem report, research paper or equivalent scholarly project, or a dissertation. (Grading may be S/U.).

RPTR 798. Dissertation. 1-6 Hours.
PR: Consent. This is an optional course for programs that wish to provide formal supervision during the writing of students reports (698), or dissertations (798). Grading is normal.

RPTR 799. Graduate Colloquium. 1-6 Hours.
PR: Consent. For graduate students not seeking coursework credit but who wish to meet residency requirements, use of the University's facilities, and participate in its academic and cultural programs. Note: Graduate students who are not actively involved in coursework or research are entitled, through enrollment in their department's 699/799 Graduate Colloquium to consult with graduate faculty, participate in both formal and informal academic activities sponsored by their program, and retain all of the rights and privileges of duly enrolled students. Grading is S/U; colloquium credit may not be counted against credit requirements for masters programs. Registration for one credit of 699/799 graduate colloquium satisfies the University requirement of registration in the semester in which graduation occurs.

WILDLIFE AND FISHERIES MGMT COURSES

WMAN 512. Adv Wildlife Population Ecolgy. 3 Hours.
PR: WMAN 313 or equivalent, or consent. Case history approach to wildlife population ecology with emphasis on ungulates, gallinaceous birds, large predators; forest invertebrates and their vertebrate predators; endangered species; genetics and conservation of wildlife populations. Emphasis on current and historical literature. (3 hr. lec.).

WMAN 534. Ecology/Mangmnt Upland Wildlif. 4 Hours.
PR: Consent. Ecology and management of upland game birds and mammals with emphasis on recent literature. (Offered in fall of even years.).

WMAN 536. Ecology/Mangmnt Wetland Wildlf. 4 Hours.
PR: Consent. Ecology and management of waterfowl and wetland fur bears with emphasis on recent research and management literature.

WMAN 547. Applied Wetlands Ecolgy/Mngmnt. 3 Hours.
The management and ecology of wetland vegetation, soils, hydrology, and wildlife. (Cross listed as CE 547 and PLSC 547.).

WMAN 550. Fish Ecology. 3 Hours.
PR: WMAN 445. Study of the interrelations between fish and the biotic and abiotic environment and the influence of these interactions upon fisheries. Includes trophic dynamics, reproductive ecology, predatory-prey interactions, and anthropogenic factors.

WMAN 633. Quantitative Ecology. 3 Hours.
PR: STAT 511 or equivalent, and WMAN 313 or equivalent. A survey of techniques and strategies for the quantitative analysis of complex ecological data sets.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>WMAN 639</td>
<td>Conservation Biology</td>
<td>3 Hours</td>
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<td>Discussion of current topics in conservation biology, the applied science of maintaining earth's biological diversity. Emphasis is on current literature with some guest lectures by topic experts.</td>
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<tr>
<td>WMAN 640</td>
<td>Fish Physiology</td>
<td>3 Hours</td>
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<td>This course will cover all of the physiological systems in fish. Included are sensory, digestive, circulatory, nervous and endocrine, feeding, osmoregulation, movement, reproduction, and development systems.</td>
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<tr>
<td>WMAN 641</td>
<td>Aquatic Toxicology</td>
<td>3 Hours</td>
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<td>Class will cover toxicity testing, the environmental fate of contaminants and toxicological assessment. The class will emphasize fish toxicity.</td>
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<td>WMAN 642</td>
<td>Advanced Fish Management</td>
<td>3 Hours</td>
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<td>Class covers important topics in fisheries assessment and management. Primary areas discussed include fish sampling, indices, and exploitation and harvest regulations.</td>
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<tr>
<td>WMAN 643</td>
<td>Advanced Ichthyology</td>
<td>3 Hours</td>
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<td>An in-depth study of fishes, with emphasis on ecology, morphology, systematics, and zoogeography. Identification of fishes within the Appalachian region is emphasized through lab and field study.</td>
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<td>WMAN 644</td>
<td>Wildlife Data Analysis 1</td>
<td>3 Hours</td>
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<td>This course will cover data interpretations, statistical power, data techniques, use of correct data methods and alternatives, and interpretation of results.</td>
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<tr>
<td>WMAN 645</td>
<td>Wildlife Data Analysis 2</td>
<td>3 Hours</td>
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<td>PR: WMAN 644. This course will cover statistical power and sample size, selection of proper methods, identify assumptions of methods and use of proper alternatives, and identify results.</td>
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<td>WMAN 691A-Z</td>
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<td>WMAN 693A-Z</td>
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<td>WMAN 694A-Z</td>
<td>Seminar</td>
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<td>WMAN 696</td>
<td>Graduate Seminar</td>
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<td>WMAN 697</td>
<td>Research</td>
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<tr>
<td>WMAN 770</td>
<td>Wildlife Seminar</td>
<td>1 Hour</td>
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<td>Per semester; PR: Consent. May be repeated for a maximum of 4 credit hours.) Discussion of current developments in wildlife management.</td>
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<td>WMAN 790</td>
<td>Teaching Practicum</td>
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WMAN 799. Graduate Colloquium. 1-6 Hours.
PR: Consent. For graduate students not seeking coursework credit but who wish to meet residency requirements, use of the University’s facilities and participate in its academic and cultural programs. Note: Graduate students who are not actively involved in coursework or research are entitled, through enrollment in their department’s 699/799 Graduate Colloquium to consult with graduate faculty, participate in both formal and informal academic activities sponsored by their program, and retain all of the rights and privileges of duly enrolled students. Grading is S/U; colloquium credit may not be counted against credit requirements for masters programs. Registration for one credit of 699/799 graduate colloquium satisfies the University requirement of registration in the semester in which graduation occurs.

WMAN 900. Professional Development. 1-6 Hours.
Professional development courses provide skill renewal or enhancement in a professional field or content area (e.g., education, community health, geology). The continuing education courses are graded on a pass/fail grading scale and do not apply as graduate credit toward a degree program.

WOOD SCIENCE COURSES

WDSC 540. Adv Physical Behavior of Wood. 3 Hours.
PR: WDSC 340 or equivalent or consent. Physical relationships of water and wood; fluid flow through wood; thermal, electrical, and acoustical behavior of wood. Theories of wood drying and their application.

WDSC 555. Computer Apps-Forest Res Mang. 3 Hours.
Computer programming/system modeling in forest resource management. Emphasis on basic programming/modeling skills and application examples in forest operations, management, and engineering.

Anatomy and identification of commercially important North American woods. For students who have not completed a course in the anatomy of American woods.

WDSC 690. Teaching Practicum. 1-3 Hours.
PR: Consent. Supervised practice in the college teaching of wood science. Note: This course is intended to insure that graduate assistants are adequately prepared and supervised when they are given college teaching responsibility. It also provides a mechanism for students not on assistantships to gain teaching experience. (Grading will be S/U.).

WDSC 691A-Z. Advanced Topics. 1-6 Hours.
PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses.

WDSC 692A-Z. Directed Study. 1-6 Hours.
Directed study, reading and/or research.

WDSC 693A-Z. Special Topics. 1-6 Hours.
A study of contemporary topics selected from recent developments in the field.

WDSC 694A-Z. Seminar. 1-6 Hours.
Special seminars arranged for advanced graduate students.

WDSC 695. Independent Study. 1-6 Hours.
Faculty supervised study of topics not available through regular course offerings.

WDSC 696. Graduate Seminar. 1 Hour.
PR: Consent. Each graduate student will present at least one seminar to the assembled faculty and graduate student body of his or her program.

WDSC 697. Research. 1-15 Hours.
PR: Consent. Research activities leading to thesis, problem report, research paper or equivalent scholarly project, or a dissertation. (Grading will be S/U.).

WDSC 698. Thesis. 1-6 Hours.
PR: Consent. This is an optional course for programs that wish to provide formal supervision during the writing of student reports (698), or dissertations (798). Grading is normal.

WDSC 699. Graduate Colloquium. 1-6 Hours.
PR: Consent. For graduate students not seeking coursework credit but who wish to meet residency requirements, use of the University’s facilities, and participate in its academic and cultural programs. Note: Graduate students who are not actively involved in coursework or research are entitled, through enrollment in their department’s 699/799 Graduate Colloquium to consult with graduate faculty, participate in both formal and informal academic activities sponsored by their program, and retain all of the rights and privileges of duly enrolled students. Grading is S/U; colloquium credit may not be counted against credit requirements for masters programs. Registration for one credit of 699/799 graduate colloquium satisfies the University requirement of registration in the semester in which graduation occurs.

WDSC 796. Graduate Seminar. 1 Hour.
PR: Consent. Each graduate student will present at least one seminar to the assembled faculty and graduate student body of his or her program.

WDSC 797. Research. 1-15 Hours.
PR: Consent. Research activities leading to thesis, problem report, research paper or equivalent scholarly project, or a dissertation. (Grading may be S/U.).
WDSC 798. Dissertation. 1-6 Hours.
PR: Consent. This is an optional course for programs that wish to provide formal supervision during the writing of student reports (698), or dissertations (798). Grading is normal.

WDSC 930. Professional Development. 1-6 Hours.
Professional development courses provide skill renewal or enhancement in a professional field or content area (e.g., education, community health, geology.) These tuition-waived continuing education courses are graded on a pass/fail grading scale and do not apply as graduate credit toward a degree program.