DEPARTMENT OF
FORESTRY AND ENVIRONMENTAL RESOURCES

Undergraduate Curricula in Environmental Technology and Management; Fisheries, Wildlife, and Conservation Biology; Forest Management; and Natural Resources

Student Handbook
August 2013

North Carolina State University
College of Natural Resources
Raleigh, NC 27695-8008

Phone: 919-515-2891
Fax: 919-515-6193
www.cnr.ncsu.edu/fer

This handbook is produced by the Department of Forestry and Environmental Resources of North Carolina State University for the use of its students and faculty. Academic policies and curriculum requirements herein are applicable to freshmen and transfer students enrolling in the Department of Forestry and Environmental Resources during the period August 2013 - July 2014. You and your advisor will consult this handbook frequently during preregistration period for the duration of your study in the Department of Forestry and Environmental Resources.

The handbook is available online at: cnr.ncsu.edu/fer/ug/current/handbook.php
CH. 1. PHILOSOPHY OF THE UNDERGRADUATE PROGRAM

The undergraduate programs of the Department of Forestry and Environmental Resources at NCSU prepare students for professional challenges, personal growth, and a lifetime of service as managers of renewable natural resources. The curricula endeavor to produce well educated forestry and natural resources graduates who have the basic knowledge, skills, flexibility, and attitude needed for successful professional performance. Elective courses allow students to prepare in greater depth for careers in industry, science, private consulting, extension, and public land management.

The Department has four curricula: Environmental Technology and Management (ETM); Forest Management (FOM); Natural Resources (NRE and NRP); and Fisheries, Wildlife and Conservation Biology (SFW, SFF and SFWCB). The Environmental Technology and Management curriculum prepares students to collect data on real world environmental problems, analyze and interpret those data, and determine appropriate solutions. The Forest Management curriculum provides the broad based forestry education needed for direct employment into positions in a wide variety of forestry or forestry related organizations. The Natural Resources curricula (NRE, NRP) provides students with the skills to manage resources in a variety of settings, with the Ecosystem Assessment concentration focusing on the biophysical world and the Policy and Administration concentration focusing on the people that manage it. The Fisheries, Wildlife and Conservation Biology – Wildlife Concentration (SFW) provides students with a strong base in biological, social, and physical sciences required for career positions in wildlife and management. The Fisheries, Wildlife and Conservation Biology – Fisheries Concentration (SFF) provides students with a strong base in biological, social, and physical sciences required for careers in fisheries resources. The Fisheries, Wildlife, and Conservation Biology – Conservation Biology Concentration (SFWCB) focuses on conservation of non-game fish and wildlife, human dimensions, landscape and urban planning, and global issues such as climate change. Flexibility for specialization, planning for graduate study, or dual degrees is provided and encouraged.

The undergraduate program in the Department of Forestry and Environmental Resources is a dynamic one, where continuous improvements are designed to respond to changes in the natural resources profession and the needs of employers. The Department of Forestry and Environmental Resources strives to recruit and retain the highest quality students and faculty. Its academic curricula are enriched by out-of-class contacts among students, faculty and practicing professionals, promoting a sense of professionalism and professional community. Gaining practical experience is encouraged through participation in summer employment and the cooperative education program.

All NC State Department of Forestry and Environmental Resources graduates should:

- Understand the social, political, and economic framework in which forestry, environmental sciences, fish and wildlife resources, and natural resources graduates must function;
- Communicate effectively;
- Utilize modern technologies, skills, and tools;
- Appreciate the role of research in furthering the practice of modern natural resource management; and
- Recognize that forestry, environmental sciences, fisheries and wildlife sciences, and natural resources management are important to the long term welfare of society and as managers they must maintain the highest ethical standards.
CH. 2. DEPARTMENT OF FORESTRY AND ENVIRONMENTAL RESOURCES
TEACHING AND ADVISING FACULTY

A. YOUR ADVISOR

Every student is assigned a faculty advisor to guide him/her through their academic years. You are asked to stop by his or her office and introduce yourself if you have missed the department social functions during orientation. During the three-week pre-registration advisory period, please sign up for advising time on the sheet posted on your advisor’s door, and complete the plan of course work prior to your meeting with your advisor. You will not be able to pre-register without your hold released and your advisor is the only authorized person to give it to you.

If you experience mid-semester difficulties or if you need tutoring, contact your advisor. He/she should be able to help and guide you through these difficulties. Similarly, if your interests and goals have changed and you have decided that another advisor might serve you best, please contact the Undergraduate Programs Director, Dr. Gary Blank, for guidance and support.

The online Faculty and Staff Directory is available at cnr.ncsu.edu/fer/directory

B. TEACHING AND ADVISING FACULTY

Robert C. Abt
Professor of Forestry
3126 Jordan Hall, Ph. 515-7791
bob_abt@ncsu.edu
Research Interests: Regional timber supply modeling; Economics of agroforestry; Econometric applications in forestry.

Courses: FOR 319 (Forest Economics); FOR 334 (Operations Research Applications in NR); NR 400 (Natural Resource Management)

Robert E. Bardon
Professor, Extension Leader and Assoc. Dean of Extension & Engagement
4233 Jordan Hall Annex, Ph. 515-5575
robert_bardon@ncsu.edu
Research Interests: Currently focusing on educating family forest owners on marketing & management & conducting applied work on minimizing conflict between local land use policy & family forest operations.

D. Michael Benson
Professor of Plant Pathology
Head House Unit 3; Method 208
Ph. 515-3966
mike_benson@ncsu.edu
**Research Interests:** Epidemiology & control of ornamental diseases; Ecology of root-infecting fungi

**Courses:** FOR (PP) 318 (Forest Pathology)

**Gary B. Blank**
Director of Undergraduate Programs
Associate Professor of Forestry
5229 Jordan Hall Annex, Ph. 515-7566
gary_blank@ncsu.edu

**Research Interests:** History of forested environments; Longleaf restoration; Harris Research Tract environmental impact assessment; Science & technical communications development; Environmental education

**Courses:** FOR 248 (Forest History, Technology and Society); FOR 491/NR 491 (Sp Topics for FOR & NR, including Longleaf Pine Field Analysis, NR Teamwork Lab, & Wildlife Habitat Analysis); NR 100 (Introduction to Natural Resources); NR 360 (Internship Experience); NR 484 (Environmental Impact Assessment);

**Richard R. Braham**
Professor of Forestry
3003 Biltmore, Ph. 515-7568
richard_braham@ncsu.edu

**Research Interests:** Dendrology; Phytosociology; Ecology & management of protected species; Restoration of longleaf pine & pocosins

**Courses:** FOR 252 (Introduction to Forest Science); FOR 261 (Forest Communities); FOR 339 (Dendrology)

**Robert I. Bruck**
Professor of Plant Pathology
2221 Jordan Hall Annex, Ph. 515-2086
bob_bruck@ncsu.edu

**Research Interests:** Epidemiology of Forest Tree Diseases; Effects of Air Pollution on Forest Ecosystems.

**Courses:** ET 100 (Introduction to Environmental Sciences); ET 105 (Introduction to Environmental Regulations); ET 203(Pollution Preventions); ET 330 (Environmental Technology Practicum); ET 402(Solar Voltaic Energy); ET 490 (Seminar in Environmental Technology)
Bronson P. Bullock
Associate Professor of Forestry, Biometrics & Timber Management
SAF Student Chapter and Forestry Club Advisor
3102 Jordan, Ph. 513-1248
bronson_bullock@ncsu.edu

Research Interests: Forest biometrics; Individual-stem & whole-stand modeling; Stand dynamics; Application of spatial statistics to forest inventory & modeling

Courses: FOR 172 (Forest Systems Mapping and Mensuration I); FOR 273 (Forest System Mapping and Mensuration II); FOR 374 (Forest Measurements, Modeling and Inventory)

Heather M. Cheshire
Teaching Associate Professor
5124 Jordan, Ph. 515-3433
heather_cheshire@ncsu.edu

Research Interests: Application of remotely sensed data and geographic information systems to the analysis, inventory, and management of natural resources.

Courses: ET 252 (Introduction to Spatial Technologies); GIS 410 (Introduction to GIS)

Barbara Conkling
Research Assistant Professor
Forest Sciences Laboratory
919-549-4084
bconkling@fs.fed.us

Research Interests: Forest soils and relationships among above and below ground properties and ecology; broad soil chemistry; efficient and useful technology transfer

Courses: FOR 250 (Professional Development II: Communications in Natural Resources)

Joseph L. Cox
College Forest Manager/Lecturer
5219 Jordan Hall Annex, Ph. 515-7577
joe_cox@ncsu.edu

Research Interests: Silviculture (pine and hardwood); Private non-industrial forest management; Control of non-indigenous, invasive species

Courses: FOR 204 (Silviculture); FOR 422 (Consulting Forestry)
Frederick W. Cubbage
Professor of Forestry
3118B Jordan, Ph. 515-7789
fred_cubbage@ncsu.edu
Research Interests: Forest resource policy; Timber production & harvesting economics; Forest certification; Sustainable forest management
Courses: NR 460 (Renewable Resource Policy Management)

Jason Delborne
Associate Professor of Natural Resources/Environmental Policy
Research Interests: Agricultural biotechnology, nanotechnology, environmental toxics, and biofuels.
Courses: To be determined

Christopher S. DePerno
Associate Professor, Fisheries, Wildlife and Conservation Biology
Research Interests: Population ecology and management of big game species and predators; Habitat use & selection of big game species and predators; Interactions of predators and prey; Sexual segregation and resource partitioning in ungulates; Animal damage & wildlife education
Courses: FW 311 (Piedmont Wildlife Ecology & Management); FW 313 (Mountain Wildlife Ecology & Management); FW 353 (Wildlife Management)

Ryan Emanuel
Assistant Professor of Hydrology
Research Interests: Ecohydrology; Watershed hydrology; Watershed biogeochemistry; Land-atmosphere interaction; Secondary ecosystem succession
Courses: FOR 420 (Watershed & Wetlands Hydrology); NR 421 (Wetland Assessment, Delineation & Regulation)
John L. Frampton  
Associate Professor of Forestry  
B.S. – University of Georgia (1978)  
3219 Jordan Hall Annex, Ph. 515-7580  
M.S. – University of Florida (1980)  
john_frampton@ncsu.edu  
Ph.D. – NC State University (1984)  

Research Interests: Christmas tree genetics; Genetic conservation of Fraser fir; Propagation and use of clones in forest tree species; Host-pest interactions in forest tree species  

Courses: FOR 491 (Special Topics in Forestry- Christmas Tree Research)  

Douglas J. Frederick  
Professor of Forestry  
B.S. – West Virginia University (1967)  
3128 Jordan, Ph. 515-7788  
M.S. – West Virginia University (1968)  
doug_frederick@ncsu.edu  
Ph.D. – University of Idaho (1972)  

Research Interests: Hardwood silviculture & ecology; Restoration ecology; Mitigation, wetlands, biomass, nutrient & energy distribution in hardwood forests of the South; Species selection & silvicultural systems for plantation hardwoods in the Southeast  

Courses: FOR 330 (North Carolina Forests); FOR 406 (Forest Inventory, Analysis & Planning); FOR 491 (Special Topics in Forestry-Hardwood Ecology & Management)  

Beth Gardner  
Assistant Professor of Quantitative, Wildlife Biology  
B.S. – Allegheny College (1999)  
Turner House, 110 Brooks Ave  
M.S. – Cornell University (2002)  
Ph. 513-7558  
beth_gardner@ncsu.edu  
Ph.D. – Cornell University (2007)  

Research Interests: Development of spatial capture-recapture models; Hierarchical models of animal abundance & occurrence (e.g., site-occupancy models); Bayesian analysis in ecology, spatial modeling  

Courses: FW 453 (Principles of Wildlife Science)  

Barry Goldfarb  
Professor and Head  
B.S. – Southern Oregon St. College (1983)  
Department of Forestry  
M.S. – Oregon St. University (1986)  
and Environmental Resources  
Ph.D. – Oregon St. University (1990)  
3119 Jordan, Ph. 515-7789  
barry_goldfarb@ncsu.edu  

Research Interests: Molecular & genetic control of root systems in forest trees; Vegetative propagation of forests
George R. Hess  
Associate Professor of Forestry  
5233 Jordan Hall Annex, Ph. 515-7437  
george_hess@ncsu.edu  
Research Interests: Biomathematics; Biometrics; Ecology; Natural resource management; Conservation; Spatially explicit population modeling  
Courses: NR 295 (Special Topics in NR); NR 300 (Natural Resource Measurements); NR 491 (Natural Resources Teamwork Lab); Effective Scientific Posters

Stephanie Jeffries  
Teaching Assistant Professor  
3113 Jordan Hall  
steph_jeffries@ncsu.edu  
Research Interests: Ecology, patterns and processes of forested ecosystems, forest succession, dendrology, conservation biology and communicating science to broad audiences.  
Courses: NR 301 (Practicum for Professional Development I); NR 360 (Internship Experience); NR 401 (Practicum for Professional Development II); NR 460 (Renewable Natural Resource Management and Policy)

Siamak Khorram  
Professor of Forestry and of Electrical and Computer Engineering  
5114 Jordan, Ph. 515-3430  
siamak_khorram@ncsu.edu  
Research Interests: Remote sensing; Image processing; Geographic information systems & their applications to environment, engineering, and natural resources inventory, management, and monitoring.  
Courses: FOR 353 (Air Photo Interpretation and Photogrammetry)

John King  
Professor  
1019 Biltmore Hall; Ph. 513-7855  
john_king@ncsu.edu  
Research Interests: Global environmental change; Forest ecophysiology; Forest carbon; Nutrient cycling  
Courses: FOR 303 (Silvics and Forest Tree Physiology)
Tom Kwak
Professor and Unit Leader of NC Coop. Fish and Wildlife Res. Unit
Department of Biology, CALS
201 David Clark Labs, Ph. 513-2696
E-mail: tkwak@ncsu.edu


Courses: FW 312 (Fisheries Technique & Management); FW 495A (Special Topics in Fisheries & Wildlife Science)

Terrie H. Litzenberger
Lecturer, Environmental Technology and Management
2227 Jordan Hall Annex, Ph. 515-7581
E-mail: terrie_litzenberger@ncsu.edu

Courses: ET 201(Water Quality- Lab I) ; ET 202 (Plants, Soils & Natural Systems- Lab II) ; ET 302 (Indoor Air Quality- Lab IV)

Melissa McHale
Assistant Professor of Urban Ecology
5225 Jordan Hall Annex, Ph 515-7579
E-mail: melissa_mchale@ncsu.edu

Research Interests: Carbon dynamics in urban systems, urbanization effects on nutrient cycling, ecosystem service tradeoffs, social drivers of ecosystem processes, spatial & temporal dynamics of urbanization, policy driven & multi-disciplinary approaches to urban ecological analyses.

Courses: FOR 220 (Urban Forestry)

Steven E. McKeand
Professor of Forestry
Director of Tree Improvement Program
1019 Biltmore Hall, Ph. 515-6073
E-mail: steve_mckean@ncsu.edu

Research Interests: Genetics and breeding of forest trees; Seed orchard management; Tree nutrition and genetics; Vegetative propagation; Propagation effects on vegetative and reproductive growth.

Courses: FOR 411 (Forest Tree Genetics & Biology)
Ross Meentemeyer  
Professor and Director of the Center for Earth Observation  
B.S. – Univ. of Georgia (1993)  
Office/Phone to be determined

Research Interests: GIScience & spatial modeling; Landscape ecology, Biological invasions and disease ecology; Human-Environment interactions; and Land change modeling

Courses: To be determined

Mark A. Megalos  
Assistant Professor and Extension Specialist  
B.S. – Rutgers University (1981)  
M.S. – NC State University (1986)  
Ph.D. – NC State University (2000)  
mark_megalos@ncsu.edu

Research Interests: Landowner incentives; Programmatic impacts; Biomass, conservation strategies

Extension Responsibilities: Forest management: Taxation; Herbicides; Reforestation, Conservation easements

Christopher Moorman  
Professor and Graduate Coordinator of the Fisheries, Wildlife, and Conservation Biology Program  
B.S. – University of Georgia (1992)  
M.S. – University of Georgia (1995)  
Ph.D. – Clemson University (1999)  
chris_moorman@ncsu.edu

Research Interests: Effect of forest management on wildlife habitat; Habitat selection of non-game wildlife with emphasis on birds; Environmental education; Urban wildlife management

Courses: FOR 264 (Forest Wildlife); FW 404 (Forest Wildlife Management); FW 492 (External Learning Experience); FW 493 (Special Problems in Fisheries & Wildlife Sciences)

Stacy Nelson  
Associate Professor  
B.S. – Jackson State University (1990)  
M.A. – College of William and Mary - Virginia Institute of Marine Science (1995)  
Ph.D. – Michigan State University (2002)  
stacy_nelson@ncsu.edu

Research Interests: Using remote sensing and GIS technologies to address both regional and local-scale questions of land use/cover change and also the impact of this change on inland lakes, wetland and coastal ecosystems, and associated effects on water quality and fisheries ecology.

Courses: NR 532 (Principles of Geographic Information Science); NR 533 (Application Issues in Geographic Information Systems)
Elizabeth G. Nichols  
Associate Professor  B.S. – Emory University (1987)  
2225 Jordan Hall Annex, Ph. 513-4832  M.S. – UNC-Chapel Hill (1994)  
elizabeth_nichols@ncsu.edu  Ph.D. – UNC-Chapel Hill (1997)  

**Research Interests:** Pollutant bioavailability; Contaminated sediments; Phytoremediation  

**Courses:** ET 310 (Environmental Monitoring and Analysis); ET 460 (Practice of Environmental Technology); ET 470 (Environmental Forensics)  

Larry Nielsen  
Professor of Natural Resources  B.S. – University of Illinois (1970)  
3118 A Jordan Hall  M.S. – University of Missouri (1974)  
Phone 515-5314  Ph.D. – Cornell University (1978)  
larry_nielsen@ncsu.edu  

**Research Interests:** Sustainable natural resource management; History & philosophy of natural resource management; Ecosystem management  

**Courses:** FW 221 (Conservation of Natural Resources)  

Lara Pacifici  
Assistant Professor and Undergraduate Coord.  B.S. – SUNY  
of the Fisheries, Wildlife, and Conservation  M.S. – Auburn University  
Biology Program  Ph.D. – University of Georgia  
Office/Phone to be determined  (check back with online faculty directory)  

**Research Interests:** Environmental and forest biology; Wildlife biology; Science Education  

**Courses:** To be determined  

M. Nils Peterson  
Associate Professor, Fisheries, Wildlife,  B.S. – Texas A & M (2000)  
nils_peterson@ncsu.edu  

**Research Interests:** Policy analysis; Environmental attitude and behavior assessment; Assessing impacts of human behaviors on endangered wildlife populations  

**Courses:** FW 403 (Urban Wildlife Management); FW 411( Human Dimensions of Wildlife & Fisheries Management)
**Joseph P. Roise**  
Professor of Forestry and Director of Graduate Programs  
3114 Jordan, Ph. 515-7783  
[joe_roise@ncsu.edu](mailto:joe_roise@ncsu.edu)

**Research Interests:** Management science/operations research in forestry and forest products industry; optimization of simulated processes; Management decision support systems; Integrated planning.

**Courses:** FOR 265 (Fire Management); FOR 405 (Forest Management); FOR 434 (Forest Operations and Analysis); FOR 491 (Special Topics in Forestry)

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**Ted Shear**  
Associate Professor of Forestry  
3124 Jordan, Ph. 513-7794  
[ted_shear@ncsu.edu](mailto:ted_shear@ncsu.edu)

**Research Interests:** Restoration ecology; Water quality; Urban forestry

**Courses:** FOR 260 (Forest Ecology)

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**Erin O. Sills**  
Professor  
3112 Jordan, Ph. 515-7784  
[erin_sills@ncsu.edu](mailto:erin_sills@ncsu.edu)

**Research Interests:** International forestry; Natural resource economics; Management and valuation of tropical forests for non-timber products and services.

**Courses:** FOR 414 (World Forestry); NR 491 (Forest & Soil Ecology)

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**Jose Stape**  
Associate Professor  
3108 Jordan Hall  
Ph. 513-4041  
[jlstage@ncsu.edu](mailto:jlstage@ncsu.edu)

**Research Interests:** Silvicultural recommendations for forest plantations (Pinus, Eucalyptus) including site-preparation, fertilization, spacing, thinning and rotation length. Factors limiting forest productivity and controlling C allocation. Use of processed-based models to address scientific questions regarding forest management.

**Courses:** FOR 304 (Theory of Silviculture)
Anne Stomp  
Associate Professor of Forestry  
B.S. – Univ. of Connecticut (1973)  
3019 Biltmore Hall  
M.S. – Univ. of Connecticut (1981)  
Ph. 515-7574  
Ph.D. – NC State University (1985)  
anne_stomp@ncsu.edu  

Research Interests: Forest biology & biotechnology; gene transfer mechanisms in loblolly pine; growth and developmental biology of trees, tissue culture, gene transfer & molecular biology; use of biotechnology for environmental remediation

Courses: FOR 150 (Professional Development I: Critical Thinking in Natural Resources)

Linda R. Taylor  
Lecturer  
B.S. – Stanford University (1988)  
2223 Jordan Hall Annex, Ph. 513-3972  
M.Sc. – UNC – Chapel Hill (1992)  
LR_Taylor@ncsu.edu  

Research Interests: Environmental regulations, hazardous waste remediation, industrial health and safety.

Courses: ET 301 (Hazardous Waste Operations and Emergency Response- Lab III); ET 303 (Occupational Safety and Health); ET 401 Hazardous Waste and Groundwater Sampling

Sarah T. Warren  
Associate Professor  
B.A. – Wellesley College (1971)  
3118 Jordan Hall, Ph. 515-7996  
M.F.S. – Yale University (1986)  
sarah_warren@ncsu.edu  
D.F. – Yale University (1993)  

Research Interests: Rural development forestry; Limited-resource landowners, property & land tenure; Urban forestry

Courses: NR 406 (Conservation of Biological Diversity)

Ross Whetten  
Associate Professor  
B.S. – Arizona State University (1981)  
5231 Jordan Addition, Ph. 515-7578  
Ph.D. – Vanderbilt University (1988)  
ross_whetten@ncsu.edu  

Research Interests: Biochemistry & molecular biology of tree growth & development

Courses: FOR 350(Professional Development III: Ethical Dilemmas in NR Management); FOR 411(Forest Tree Genetics & Biology)
C. OTHER PEOPLE YOU NEED TO KNOW IN THE COLLEGE OF NATURAL RESOURCES

Office of Academic Affairs – College of Natural Resources
See CNR Faculty and Staff Directory for more information

꼬 Dr. Adrianna G. Kirkman, Associate Dean for Academic Affairs
2018 Biltmore, Ph. 515-6191

• Responsible for administration of all academic programs in the College of Natural Resources; signs all forms requiring approval of the College Dean.

꼬 Mrs. Yvonne Lee, Student Services Manager
2018 Biltmore, Ph. 515-5741

• Provides guidance and advice on all matters relating to academic programs. Assistant to Dr. Kirkman

꼬 Ms. Sarah Pickel, Student Services Assistant
2018 Biltmore, Ph. 513-7487

• Assistant to Mrs. Lee and Dr. Kirkman, handles student forms and class scheduling

꼬 Ms. Shannon Cox, Student Services Assistant
2018 Biltmore, Ph. 513-7616

• Assistant to Mrs. Lee and Dr. Kirkman

Department of Forestry and Environmental Resources
See FER Faculty and Staff Directory for more information

꼬 Dr. Barry Goldfarb, Professor and Head, Dept of Forestry and Environmental Resources
3120 Jordan Hall, Ph. 515-4471

• Activities are focused on supporting our students, faculty and staff as we try to excel in our teaching/learning, research, extension and outreach missions.

꼬 Dr. Gary Blank, Director, Undergraduate Programs
5229 Jordan Hall Addition, Ph. 515-7566

• Responsible for administration of the undergraduate programs in the Department of Forestry and Environmental Resources, evaluates transfer transcripts, handles undergraduate academic requests requiring departmental approval

꼬 Mrs. Eileen Broderick
3122 Jordan Hall, Ph. 515-2893

• Business Officer for the Department of Forestry and Environmental Resources
Ms. Sydna Willis, Undergraduate Student Services Assistant  
3136H Jordan Hall, Ph. 515-7560

- Assists Dr. Blank with all aspects of administering the undergraduate programs in the Department of Forestry and Environmental Resources

Ms. Sarah Slover, Graduate Programs Coordinator  
3136 Jordan, Ph. 515-7563

- Assists Dr. Roise in administering the graduate programs

Mrs. Lisa Schabenberger, Program Coordinator  
3127 Jordan, Ph. 513-7368

- Assists Dr. Goldfarb and others in the department with special programs; FER webmaster

Mrs. Christi Standley, Undergraduate Program Coordinator  
3136-C Jordan, Ph. 513-2582

- Assists Dr. Blank in the undergraduate programs in the Department of Forestry and Environmental Resources

Ms. Carolina Thomson,  
3120 Jordan, Ph. 515-2892

- Accounting Assistant for the Department of Forestry and Environmental Resources
D. UNDERGRADUATE PLANS OF STUDY

Upon admission as a degree-seeking student, a NC State undergraduate student is expected to make satisfactory progress in a planned and deliberate way toward graduation. This expectation of satisfactory progress translates into the following University minimum requirements:

A. Development and registering of a Plan of Study that serves as a planning tool for completing degree requirements for the major(s) in which the student is matriculated, or in the case of the student enrolled in the First Year College (and other undeclared or undesignated programs), expects to matriculate, or transfer. The Plan of Study can include plans for tailoring the academic education, study abroad and other specialized academic opportunities should be reflected in the registered Plan of Study.

B. Enrollment in course work consistent with the student’s Plan of Study.

C. Continuous full-time enrollment (a minimum of 12 credit hours) during consecutive semesters (i.e. Fall, Spring) until graduation, and successful completion of at least 24 credit hours of NC State or transferable course work each academic year, unless otherwise justified by an approved Plan of Study.

D. Matriculation into a degree program by the beginning of classes in the first semester that the student has junior status (i.e. 60 credit hours earned-criteria established in the Classification of Undergraduate Degree Students regulation).
CH. 3. THE UNDERGRADUATE CURRICULA

A. The Curricula

The course sequences for four-year students (those beginning study as freshmen) are shown in the curriculum outlines in this section. The courses of the curricula are organized in a logical sequence with general education courses in the early semesters followed by the specific topical courses in the later semesters. Students who are academically well prepared and who take full course loads each semester will complete the degree in four years. Students who take less than full loads, who must take remedial courses, or retake failed courses, can expect to take longer than four years to complete the curriculum. **IT IS THE STUDENT'S RESPONSIBILITY TO KNOW THE CURRICULUM AND TO TAKE THE COURSES IN THE PROPER SEQUENCE.** Check the Department’s course descriptions on the web at:

http://www.cnr.ncsu.edu/fer/ug/future

and be familiar with required prerequisite courses that must be completed prior to taking a particular course. Important prerequisite sequences are outlined later in this chapter.

The **Forest Management** (FOM) curriculum is a professional curriculum accredited by the Society of American Foresters (SAF). Its structure is based on University general education requirements, the subject matter guidelines of the SAF accreditation criteria, input from employers, and the knowledge and experience of the faculty. Graduates are prepared for public and private professional forestry positions as well as a variety of jobs closely related to forestry.

The **Natural Resources** (NRE, NRP) curricula in the Forestry Department are part of a campus-wide series of NR curricula that have a common general education core. That core has a base of communications, math, science, and humanities/social sciences that is similar to the Forest Management curriculum. The curriculum in Natural Resources - Policy and Administration (NRP) is a broad-based one with an in-depth series of courses in economics, government and public administration, and natural resource management. The curriculum will provide the kind of broadly trained managers needed by many public agencies and private organizations in the natural resources arena. Natural Resources - Ecosystem Assessment (NRE) is a more technically oriented curriculum that provides in-depth study in analysis of ecosystem components and also in natural resource management. This curriculum will produce the graduates needed by many public agencies and private organizations that are involved in ecosystem analysis and environmental regulations.

The **Fisheries, Wildlife and Conservation Biology** curricula (SFF - Fisheries concentration; SFW - Wildlife concentration; and SFWCB - Conservation Biology concentration) are professional curricula that build on a strong base in biological, physical and social sciences to prepare graduates to solve problems associated with consumptive and non-consumptive uses of fisheries and wildlife resources. Flexibility in the curricula allows the student to meet academic requirements for certification as Wildlife Biologist by The Wildlife Society. Graduates are prepared for positions with natural resource agencies and conservation education organizations, and for further graduate studies.
The **Environmental Technology and Management** (ETM) curriculum focuses on the assessment of impacts to the environment and the technology for managing those impacts. This curriculum prepares students to collect data on real world environmental problems, analyze and interpret those data, and determine appropriate solutions. Students receive a broad education in the natural sciences, humanities and social sciences, communications, and computer operation to acquire the technical knowledge and skills needed for sound environmental assessment and management. Many Environmental Technology and Management courses emphasize hands-on training with state-of-the-art monitoring equipment. A practicum to obtain actual working-world experience is required. Career opportunities include technical positions with: firms that offer environmental services; manufacturing companies that are required to maintain sophisticated environmental networks; consulting and audit firms that perform independent environmental audits; and state and federal regulatory agencies.
## FRESHMAN YEAR

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<td>FOR (WPS) 202 Wood Anatomy &amp; Properties¹</td>
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<td>CH 101 Chemistry – A Molecular Science</td>
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<td>MA 114 Intro. Finite Math with Applications</td>
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<td>CH 102 General Chemistry Lab</td>
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<td>PB 200 Plant Life</td>
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<td>FOR 150 Prof. Development I: Critical Thinking¹</td>
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<td>GEP Interdisciplinary Perspectives Elective*</td>
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## SOPHOMORE YEAR

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<td>FOR 250 Prof. Development II: Communications¹</td>
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<td>FOR 339 Dendrology¹</td>
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<td>SSC 200 Soil Science</td>
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<td>Advised Elective²</td>
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<td>ST 311 Introduction to Statistics</td>
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### SUMMER SESSION

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<td>FOR 204 Silviculture¹</td>
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<td>FOR 261 Forest Communities¹</td>
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<td>FOR 264 Forest Wildlife¹</td>
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<td>FOR 265 Fire Management¹</td>
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## JUNIOR YEAR

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<td>FOR 319 Forest Economics¹</td>
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<td>FOR 304 Theory of Silviculture¹</td>
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<td>FOR 334 Operations Research Applications¹</td>
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<td>FOR 350 Prof. Development III: Ethics¹</td>
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<td>FOR 353 Air Photo Interp. &amp; Photogrammetry¹</td>
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<td>FOR (ENT) 402 Forest Entomology¹</td>
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<td>FOR 374 Forest Meas., Modeling &amp; Inventory¹</td>
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## SENIOR YEAR

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<td>FOR 405 Forest Management¹</td>
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<td>FOR 450 Prof. Development IV: Leadership¹</td>
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Minimum Credit Hours Required for Graduation: 127
Major/Program Footnotes:

1A minimum grade of C- is required.
2Advised Electives. Select any 200-level or higher course not otherwise required from among the following possibilities: (1) courses with the prefix ACC, ARE, BAE, CH, CS, EC, ENT, FOR, FW, HS, MA, NR, PB, PP, PY, ST, SSC, WPS, or ZO; (2) PRT 462; (3) any FL* course not needed to fulfill the language co-requisite; or (4) courses taken in partial fulfillment of an academic minor. All other courses must be approved by the student’s faculty advisor.
3Technical Electives. Select any 200-level or higher course not otherwise required from among the following prefixes: FOR, FW, or NR.

* General Education Program (GEP) requirements and GEP Footnotes:
To complete the requirements for graduation and the General Education Program, the following category credit hours and co-requisites must be satisfied. University approved GEP course lists for each of the following categories can be found at http://oucc.ncsu.edu/gep-courses.

Mathematical Sciences (6 credit hours – one course with MA or ST prefix)
Choose from the University approved GEP Mathematical Sciences course list or the following course(s) if completed as part of the Major requirements may fulfill part or all of this requirement: MA 114, MA 121

Natural Sciences (7 credit hours – include one laboratory course or course with a lab)
Choose from the University approved GEP Natural Sciences course list or the following course(s) if completed as part of the Major requirements may fulfill part or all of this requirement: CH 101/102, PB 200

Humanities (6 credit hours selected from two different disciplines/course prefixes)
Choose from the University approved GEP Humanities course list or the following course(s) if completed as part of the Major requirements may fulfill part or all of this requirement: ENG 331 or ENG 332 or ENG 333. Select an additional course with a prefix other than ENG.

Social Sciences (6 credit hours selected from two different disciplines/course prefixes)
Choose from the University approved GEP Social Sciences course list or the following course(s) if completed as part of the Major requirements may fulfill part or all of this requirement: (ARE 201 or EC 205) and NR 460

Physical Education/Healthy Living (2 credit hours – at least one 100-level Fitness and Wellness Course)
Choose from the University approved GEP Physical Education/Healthy Living course list.

Additional Breadth - (3 credit hours to be selected from the following checked University approved GEP course lists)

Interdisciplinary Perspectives (5-6 credit hours)
Choose from the University approved GEP Interdisciplinary Perspectives course list or the following course(s) if completed as part of the Major requirements may fulfill part or all of this requirement:

Introduction to Writing (4 credit hours satisfied by completing ENG 101 with a C- or better)

The following Co-Requisites must be satisfied to complete the General Education Program requirements:

U.S. Diversity (USD)
Choose from the University approved GEP U.S. Diversity course list or choose a course identified on the approved GEP course lists as meeting the U.S. Diversity (USD) co-requisite. The following course(s) completed as part of the Major requirements may fulfill this requirement:

Global Knowledge (GK)
Choose from the University approved GEP Global Knowledge course list or choose a course identified on the approved GEP course lists as meeting the Global Knowledge (GK) co-requisite. The following course(s) completed as part of the Major requirements may fulfill this requirement:

Foreign Language proficiency - Proficiency at the FL_102 level is required for graduation.
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<td>ARE (EC) 336 Intro Res &amp; Environ. Economics</td>
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<td>PB 365 Ecology Lab</td>
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<td>NR 460 Renew Resource Pol. &amp; Mgmt.</td>
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<td>NR 484 Practice of Environ Impact Assessment</td>
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<td>FW 353 Wildlife Management or FW404 Forest Wildlife Management</td>
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Minimum Credit Hours Required for Graduation: 126
Footnotes:

1 **General Education Program (GEP) requirements and GEP Footnotes:**
To complete the requirements for graduation and the General Education Program, the following category credit hours and co-requisites must be satisfied. University approved GEP course lists for each of the following categories can be found here: [http://oucc.ncsu.edu/gep-courses](http://oucc.ncsu.edu/gep-courses).

**Mathematical Sciences** (6 credit hours – one course with MA or ST prefix)
Curriculum requirements automatically fulfill this category.

**Natural Sciences** (7 credit hours – include one laboratory course or course with a lab)
Curriculum requirements automatically fulfill this category.

**Humanities** (6 credit hours selected from two different disciplines/course prefixes)
Choose from the University approved GEP Humanities course list or the following course(s) if completed as part of the Major requirements may fulfill part or all of this requirement:

**Social Sciences** (6 credit hours selected from two different disciplines/course prefixes)
Curriculum requirements in economics and political science automatically fulfill this category.

**Physical Education/Healthy Living** (2 credit hours – at least one 100-level Fitness and Wellness Course)
Choose from the University approved GEP Physical Education/Healthy Living course list.

**Additional Breadth** - (3 credit hours to be selected from the following checked University approved GEP course lists)
X Humanities/Social Sciences/Visual and Performing Arts

**Interdisciplinary Perspectives** (5-6 credit hours)
Choose from the University approved GEP Interdisciplinary Perspectives course list. ARE 336 meets 3 hours of this requirement.

**Introduction to Writing** (4 credit hours satisfied by completing ENG 101 with a C- or better)

The following **Co-Requisites** must be satisfied to complete the General Education Program requirements:

**U.S. Diversity** (USD)
Choose from the University approved GEP U.S. Diversity course list or choose a course identified on the approved GEP course lists as meeting the U.S. Diversity (USD) co-requisite.

**Global Knowledge** (GK)
Choose from the University approved GEP Global Knowledge course list or choose a course identified on the approved GEP course lists as meeting the Global Knowledge (GK) co-requisite.

**Foreign Language proficiency** - Proficiency at the FL_102 level is required for graduation

2 Technical Electives- 21 credit hours: Ecosystem Assessment students select 15 credit hours from the resource science courses and 6 credit hours from the management science courses shown on the following table, selecting at least one course from each of the resource science categories.

3 A professional development program integrated into the curriculum consists of a required summer work experience between the junior and senior years and two professional development courses. Students take NR 301 in the junior year to prepare for NR 360 and seek a summer job for the following summer and will participate in presentations made by seniors enrolled in NR 401 that focus on the previous summer's work experience. A member of the teaching faculty will assist students in finding an appropriate summer job. NR 401 for the seniors will consist of written and oral reports on summer work experiences and professional development activities.
## TECHNICAL ELECTIVES

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<td>CS 414 Weed Science</td>
<td>ENT 425 General Entomology</td>
<td>FOR 420/520 Watershed &amp; Wetlands Hydrology</td>
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<td>FOR 303 Silvics &amp; Forest Tree Phys.</td>
<td>FOR 402 Forest Entomology</td>
<td>GEO 200 Principles of Geography</td>
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<td>FOR 318 Forest Pathology</td>
<td>FW 404 Forest Wildlife Mgmt.</td>
<td>MEA 200/210 Intro. Oceanography/Lab</td>
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<td>FOR 411 Forest Tree Genetics/Biology</td>
<td>FW 420 Fisheries Science</td>
<td>MEA 250/251 Intro. Coastal Environments &amp; Lab</td>
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<td>FOR 339 Dendrology</td>
<td>MEA 220 Marine Biology</td>
<td>MEA 300 Environmental Geography</td>
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<td>PB 222 Kingdom of Fungi</td>
<td>BIO 441/2 Biology of Fishes/Lab</td>
<td>NR 421 Wetland Assessment, Delineation and Regulation</td>
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<td>PB 400 Plant Structure/Diversity</td>
<td>ZO 501 Ornithology</td>
<td>SSC 361 Role of Soils in Envir. Mgmt.</td>
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<td>PB 403 Systematic Botany</td>
<td>ZO 509 Eco. of Stream Invertebrates</td>
<td>SSC 452 Soil Classification</td>
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<td>PB 405 Wetland Plants</td>
<td>ZO 586 Aquaculture I</td>
<td>SSC 461 Soil Phys. Properties &amp; Plant Growth</td>
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<td>PB 421 Plant Physiology</td>
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<td>SSC 472 Forest Soils</td>
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## MANAGEMENT SCIENCES

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<td>ARE 301 Intermediate Microecon.</td>
<td>ARE 309 Envir. Law &amp; Econ. Policy</td>
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<td>BUS 455 Quant. Methods for Mgmt.</td>
<td>ARE 436 Environmental Economics</td>
<td>BUS 305 Legal &amp; Regulatory Envir.</td>
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<td>FOR 248 Forest Hist., Tech, and Soc.</td>
<td>EC 348 Intro. to Int'l Economics</td>
<td>FOR 414 World Forestry</td>
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<td>LAR 430 Site Planning</td>
<td>EC 410 Public Finance</td>
<td>FW 411 Human Dimensions &amp; Wildlife</td>
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<td>NR350 Sustainable Use of Natural Resources</td>
<td>EC 448 International Trade</td>
<td>LAR 443 Landscape History</td>
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<td>PRT 350 Outdoor Recreation Mgmt.</td>
<td>FOR 319 Forestry Economics</td>
<td>NR 406 Conservation of Biological Div.</td>
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<td>FOR 512 Forest Economics</td>
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<td>PS 336 Global Environmental Politics</td>
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<td>PS 401 American Parties &amp; Interest Groups</td>
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FRESHMAN YEAR

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<td>PE 1** Fitness and Wellness</td>
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<td>MEA 110 Geology I Lab</td>
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SOPHOMORE YEAR

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JUNIOR YEAR

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<tbody>
<tr>
<td>PB 360 Intro to Ecology</td>
<td>3</td>
<td>ARE (EC) 336 Intro Res &amp; Environ. Economics</td>
<td>3</td>
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<tr>
<td>PB 365 Ecology Lab</td>
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<td>ENG 333 Comm. For Science &amp; Research</td>
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<tr>
<td>NR 301 Practicum for Prof. Development (^3)</td>
<td>3</td>
<td>NR 300 Natural Resource Measurements</td>
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<tr>
<td>FOR 353 Air Photo Interpret &amp; Photogram.</td>
<td>3</td>
<td>General Education Elective (^1)</td>
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<tr>
<td>ST 311 Intro to Statistics</td>
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<tr>
<td>Technical Elective (^2)</td>
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SUMMER

| NR360 Internship Experience \(^3\) | 3 | |

SENIOR YEAR

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<tr>
<td>NR 401 Practicum for Prof. Development II3</td>
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<td>NR 400 Natural Resources Management</td>
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<tr>
<td>NR 460 Renew Resource Pol. &amp; Mgmt.</td>
<td>3</td>
<td>General Education Electives(^1)</td>
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<td>NR 484 Practice of Environ Impact Assessment</td>
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<td>FW 353 Wildlife Management or</td>
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<td>FW 404 Forest Wildlife Management</td>
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<td>Technical Elective(^2)</td>
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Minimum Credit Hours Required for Graduation: 127
Footnotes:

1 General Education Program (GEP) requirements and GEP Footnotes:
To complete the requirements for graduation and the General Education Program, the following category credit hours and co-requisites must be satisfied.
University approved GEP course lists for each of the following categories can be found at http://www.ncsu.edu/uap/academic-standards/gep/courselists/index.html.

- **Mathematical Sciences** (6 credit hours – one course with MA or ST prefix)
  Curriculum requirements automatically fulfill this category.

- **Natural Sciences** (7 credit hours – include one laboratory course or course with a lab)
  Curriculum requirements automatically fulfill this category.

- **Humanities** (6 credit hours selected from two different disciplines/course prefixes)
  Choose from the University approved GEP Humanities course list or the following course(s) if completed as part of the Major requirements may fulfill part or all of this requirement:

- **Social Sciences** (6 credit hours selected from two different disciplines/course prefixes)
  Curriculum requirements in economics and political science automatically fulfill this category.

- **Physical Education/Healthy Living** (2 credit hours – at least one 100-level Fitness and Wellness Course)
  Choose from the University approved GEP Physical Education/Healthy Living course list.

- **Additional Breadth** - (3 credit hours to be selected from the following checked University approved GEP course lists)
  - X Humanities/Social Sciences/Visual and Performing Arts
  - Interdisciplinary Perspectives (5-6 credit hours)
  - Choose from the University approved GEP Interdisciplinary Perspectives course list. ARE 336 meets 3 hours of this requirement.

- **Introduction to Writing** (4 credit hours satisfied by completing ENG 101 with a C- or better)

The following Co-Requirements must be satisfied to complete the General Education Program requirements:

- **U.S. Diversity** (USD)
  Choose from the University approved GEP U.S. Diversity course list or choose a course identified on the approved GEP course lists as meeting the U.S. Diversity (USD) co-requisite.

- **Global Knowledge** (GK)
  Choose from the University approved GEP Global Knowledge course list or choose a course identified on the approved GEP course lists as meeting the Global Knowledge (GK) co-requisite.

- **Foreign Language proficiency** - Proficiency at the FL 102 level is required for graduation.

2 Technical Electives- 26 credit hours: Policy and Administration students select 9 credit hours from the resource science courses and 17 credit hours from the management science courses shown on the following table, selecting at least one course from each of the management science categories.

3 A professional development program integrated into the curriculum consists of a required summer work experience between the junior and senior years and two professional development courses. Students take NR 301 in the junior year to prepare for NR 360 and seek a summer job for the following summer and will participate in presentations made by seniors enrolled in NR 401 that focus on the previous summer's work experience. A member of the teaching faculty will assist students in finding an appropriate summer job. NR 401 for the seniors will consist of written and oral reports on summer work experiences and professional development activities.
## TECHNICAL ELECTIVES

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<thead>
<tr>
<th>Flora</th>
<th>Fauna</th>
<th>Earth Sciences</th>
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<tbody>
<tr>
<td>CS 414 Weed Science</td>
<td>BIO 441/2 Biology of Fishes/Lab</td>
<td>BIO 419 Limnology</td>
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<tr>
<td>FOR 303 Silvics &amp; Forest Tree Phys.</td>
<td>ENT 425 General Entomology</td>
<td>FOR 420/520 Watershed &amp; Wetlands Hydrology</td>
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<tr>
<td>FOR 318 Forest Pathology</td>
<td>FOR 402 Forest Entomology</td>
<td>GEO 200 Principles of Geography</td>
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<tr>
<td>FOR 339 Dendrology</td>
<td>FW 353 Wildlife Management</td>
<td>MEA 200/210 Intro. Oceanography/Lab</td>
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<tr>
<td>FOR 411 Forest Tree Genetics/Biology</td>
<td>FW 404 Forest Wildlife Mgmt.</td>
<td>MEA 250/251 Intro. Coastal Environments &amp; Lab</td>
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<tr>
<td>PB 222 Kingdom of Fungi</td>
<td>FW 420 Fisheries Science</td>
<td>MEA 300 Environmental Geography</td>
</tr>
<tr>
<td>PB 400 Plant Structure/Diversity</td>
<td>MEA 220 Marine Biology</td>
<td>NR 421 Wetland Assessment, Delineation and Regulation</td>
</tr>
<tr>
<td>PB 403 Systematic Botany</td>
<td>ZO 501 Ornithology</td>
<td>SSC 361 Role of Soils in Envir. Mgmt.</td>
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<tr>
<td>PB 405 Wetland Plants</td>
<td>ZO 509 Eco. of Stream Invertebrates</td>
<td>SSC 452 Soil Classification</td>
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<tr>
<td>PB 421 Plant Physiology</td>
<td>ZO 586 Aquaculture I</td>
<td>SSC 461 Soil Phys. Properties &amp; Plant Growth</td>
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<td>SSC 470 Wetland Soils</td>
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## MANAGEMENT SCIENCES

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<tr>
<th>Management</th>
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<tr>
<td>ACC 200 Managerial Accounting</td>
<td>ARE 301 Intermediate Microecon.</td>
<td>ARE 309 Envir. Law &amp; Econ. Policy</td>
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<tr>
<td>BUS 455 Quant. Methods for Mgmt.</td>
<td>ARE 436 Environmental Economics</td>
<td>BUS 305 Legal &amp; Regulatory Envir.</td>
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<tr>
<td>FOR 248 Forest Hist., Tech, and Soc.</td>
<td>EC 348 Intro. to Intl' Economics</td>
<td>FOR 414 World Forestry</td>
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<tr>
<td>LAR 430 Site Planning</td>
<td>EC 410 Public Finance</td>
<td>FW 411 Human Dimensions &amp; Wildlife</td>
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<tr>
<td>NR 350 Sustainable Use of Natural Resources</td>
<td>EC 448 International Trade</td>
<td>LAR 443 Landscape History</td>
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<td>PRT 350 Outdoor Recreation Mgmt.</td>
<td>FOR 319 Forestry Economics</td>
<td>NR 406 Conservation of Biological Div.</td>
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<td>PRT 451 Rec. Planning/Facility Development</td>
<td>FOR 512 Forest Economics</td>
<td>PS 201 Intro. to American Government</td>
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<td>PRT 462 Introduction to GIS</td>
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<td>PS 202 State &amp; Local Government</td>
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<td>PS 312 Intro. to Public Administration</td>
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<td>PS 320 US Environmental Law &amp; Politics</td>
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<td>PS 336 Global Environmental Politics</td>
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<td>PS 401 American Parties &amp; Interest Groups</td>
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<tr>
<td>Course</td>
<td>Credits</td>
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<tr>
<td><strong>FRESHMAN YEAR</strong></td>
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<tr>
<td>NR 100 Introductions to Natural Resources</td>
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<td>BIO 181 Introductory Biology, Ecology, Evolution, and Biodiversity</td>
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<td>GEP Requirement Additional Breadth Elective*</td>
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<td>ENG 101 Academic Writing &amp; Research*</td>
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<tr>
<td>MA 121 Elements of Calculus or MA 131 Calculus for Life/Mgmt. Sci. A</td>
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<tr>
<td><strong>SOPHOMORE YEAR</strong></td>
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<tr>
<td>ET 201 Environmental Technology Lab I or ET 203 Pollution Prevention</td>
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<td>PB 360 Intro. to Ecology1</td>
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<td>ST 311 Intro. to Statistics</td>
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<td>PS 320 US Environ. Law and Politics or PS 336 Global Environmental Politics or ARE 309 Environ. Law &amp; Econ. Policy</td>
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<td>SSC 200 Soil Science</td>
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<tr>
<td>CH 220 Introduction to Organic Chemistry or CH 221/222 Organic Chemistry I</td>
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<td>ET 301 Environmental Technology Lab III</td>
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<td>GEP Requirement Humanities Elective*</td>
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<td>Total: 14-15</td>
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<tr>
<td><strong>SUMMER</strong></td>
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<td>ET 330 Environmental Technology Practicum</td>
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<td>TOX 415 Toxicological and Environmental Chemistry or CH 223/224 Organic Chemistry</td>
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<td>ET 455 Adaptive Management or ET 470 Environmental Forensics3</td>
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<td>NR 484 Environmental Impact Assessment or NR 420 Wetlands and Watershed Hydrology</td>
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<tr>
<td>Minimum Credit Hours Required for Graduation*</td>
<td>I,J,K: 124</td>
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</table>
**Major/Program Footnotes:**

1. FOR 260 may be substituted for PB 360

2. Advised Electives: Students are encouraged to select courses that will fulfill an academic minor. Courses should enhance students’ career objectives and must be approved by faculty advisor. Listed below are recommended courses:

   ET 470*, ET 410, FOR 221, FOR 248, FOR 260, FOR 330, FOR 339, FOR 414, FOR 415, FOR 420* MB 351/352, MB 409, MB411/412, MEA 101/102, MEA 110/111, MEA 130, MEA 135, MEA 140, MEA 200, MEA 210, MEA 213, MEA 214, MEA 250, MEA 251, MEA 300, MEA 323, TOX 201, TOX 401, TOX 415, TOX 495, NR 400, NR 350, NR 421, PB 200, PB 213, PB 220, PB 400, PB 403, PB 413, PB 421, PB480, PP315, PP 460, SSC 341, SSC 361, SSC 452, SSC 461, SSC 470, ST 350, ST 361, ST 370, ST 371, ST 372, ZO 220, ZO419, ZO 441/442, ZO 460

   *ET 470 and FOR 420 cannot be counted towards both core course requirements and advised electives.

3. ET 470 may be substituted for ET 460 if ET 455 is taken. ET 470 cannot be counted toward both core course requirements and advised electives.

**General Education Program (GEP) requirements and GEP Footnotes:**

To complete the requirements for graduation and the General Education Program, the following category credit hours and co-requisites must be satisfied.

University approved GEP course lists for each of the following categories can be found at [http://oucc.ncsu.edu/gep-courses](http://oucc.ncsu.edu/gep-courses).

- **A. Mathematical Sciences** (6 credit hours – one course with MA or ST prefix)
  Choose from the University approved GEP Mathematical Sciences course list or the following course(s) if completed as part of the Major requirements may fulfill part or all of this requirement: MA 121 or MA 131 and ST 301 or ST 311

- **B. Natural Sciences** (7 credit hours – include one laboratory course or course with a lab)
  Choose from the University approved GEP Natural Sciences course list or the following course(s) if completed as part of the Major requirements may fulfill part or all of this requirement: BIO 181 and CH 101/102

- **C. Humanities** (6 credit hours selected from two different disciplines/course prefixes)
  Choose from the University approved GEP Humanities course list.

- **D. Social Sciences** (6 credit hours selected from two different disciplines/course prefixes)
  Choose from the University approved GEP Social Sciences course list or the following course(s) if completed as part of the Major requirements may fulfill part or all of this requirement: EC 201 or EC 205 or ARE 201. Select an additional course other than Economics.

- **E. Physical Education/Healthy Living** (2 credit hours – at least one 100-level Fitness and Wellness Course)
  Choose from the University approved GEP Physical Education/Healthy Living course list.

- **F. Additional Breadth** - (3 credit hours to be selected from the following checked University approved GEP course lists)

- **G. Interdisciplinary Perspectives** (5-6 credit hours)
  Choose from the University approved GEP Interdisciplinary Perspectives course list or the following course(s) if completed as part of the Major requirements may fulfill part or all of this requirement: IDS 201 or STS 302 or PHI 340

- **H. Introduction to Writing** (4 credit hours satisfied by completing ENG 101 with a C- or better)

The following **Co-Requisites** must be satisfied to complete the General Education Program requirements:

- **U.S. Diversity** (USD)
  Choose from the University approved GEP U.S. Diversity course list or choose a course identified on the approved GEP course lists as meeting the U.S. Diversity (USD) co-requisite.

- **Global Knowledge** (GK)
  Choose from the University approved GEP Global Knowledge course list or choose a course identified on the approved GEP course lists as meeting the Global Knowledge (GK) co-requisite. The following course(s) completed as part of the Major requirements may fulfill this requirement: IDS 201 or STS 302 or PHI 340

- **Foreign Language proficiency** - Proficiency at the FL_102 level is required for graduation.
# College of Natural Resources, NCSU
## Forestry and Environmental Resources Department
### Fisheries, Wildlife & Conservation Biology – Conservation Biology Concentration
#### Effective: 08/2012

## FRESHMAN YEAR

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<td>NR 100 Intro to Natural Resources</td>
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<td>CH 101 Chemistry – A Molecular Science*</td>
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<td>ENG 101 Academic Writing &amp; Research*</td>
<td>4</td>
<td>CH 102 General Chemistry Lab*</td>
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<td>MA 131 Elements of Calculus*</td>
<td>3</td>
<td>BIO 183 Intro Bio Cell/Mol*</td>
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<td>BIO 181 Intro Bio Eco./Div.*</td>
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<td>COM 110 Public Speaking or</td>
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<td>PE 1** Fitness &amp; Wellness*</td>
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<td>COM 112 Interpersonal Communication</td>
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<td>GEP Humanities Requirement*</td>
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<td>GEP Physical Ed/Healthy Living Requirement*</td>
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## SOPHOMORE YEAR

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<th>CREDITS</th>
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<tr>
<td>Plant Elective*</td>
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<td>Economic Elective*</td>
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<tr>
<td>FW 221 Conservation of Nat Resources*</td>
<td>3</td>
<td>Ecology Elective*</td>
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<tr>
<td>PY 131 Conceptual Physics*</td>
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<td>GEP Interdisciplinary Perspectives Requirement*</td>
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<td>FOR 172 Forest Systems Map &amp; Mensuration</td>
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<td>GEP Additional Breadth Requirement*</td>
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<tr>
<td>Communication Elective*</td>
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<td>Quantitative Elective*</td>
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## JUNIOR YEAR

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<td>GIS 410 Intro to GIS</td>
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<td>GEP Humanities Requirement*</td>
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<td>FW 333 Conservation Biology in Practice</td>
<td>3</td>
<td>CH 221/222 Organic Chemistry &amp; Lab</td>
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<td>FW 353 Wildlife Management</td>
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<td>GN 311 Genetics</td>
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<td>ST 311 Intro to Statistics*</td>
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## SUMMER

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<tr>
<td>Summer Camp OR</td>
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<td>Combination of Study Abroad &amp; Internships or</td>
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## SENIOR YEAR

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<th>SPRING SEMESTER</th>
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<tr>
<td>Fish and Wildlife Elective*</td>
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<td>FW 453 Principles of Wildlife Science or</td>
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<td>GEP Interdisciplinary Perspectives Requirement*</td>
<td>2-3</td>
<td>BIO 420/423 Fisheries Science</td>
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<tr>
<td>Policy Elective*</td>
<td>3</td>
<td>FW 411 Human Dimensions of Wildlife</td>
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<td>Technical Elective*</td>
<td>6</td>
<td>Conservation Biology Elective or</td>
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*Total: 14-15

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| Total: 16

Minimum Credit Hours Required for Graduation* I,J,K: 124
Major/Program Footnotes:
1 Select from FOR 339, PB 220, PB 250, PB 403, PB 405
2 Select from CH 201/202, CH 223, MEA 100, MEA 130, MEA 200, MEA 210, MEA/BIO 220, MEA 250, MEA 323, PY 212
3 Select from ARE 201, EC 201 or EC 205
4 Select from PB/BIO 360 or FOR 260
5 Select from CSC 200, MA 231, MA 241, NR 300, ST 312
6 Select from BIO 419, ENT 201, ENT/FOR 402, BIO/ENT 425, ET 252, FOR 252, FOR 304, FW 403, FW/FOR 404, FW 465, SSC 200
7 Internships or study abroad experiences can be completed at any point during the curriculum.
8 Select from BIO 410, BIO 420, BIO 441, FW 420, FW 453, ZO 501, ZO 542, ZO 544
9 Select from ARE 309, NR 460, PS 320, PS 336
10 Select from BIO 561, FW 403, FW 460, NR 406

General Education Program (GEP) requirements and GEP Footnotes:
To complete the requirements for graduation and the General Education Program, the following category credit hours and co-requisites must be satisfied. University approved GEP course lists for each of the following categories can be found at http://oucc.ncsu.edu/gep-courses.
*Courses/groupings in the above display with an asterisk may fulfill all or part of a GEP requirement. See categories below.

A. Mathematical Sciences (6 credit hours – one course with MA or ST prefix)
Choose from the University approved GEP Mathematical Sciences course list or the following course(s) if completed as part of the Major requirements may fulfill part or all of this requirement: MA 131, ST 311

B. Natural Sciences (7 credit hours – include one laboratory course or course with a lab)
Choose from the University approved GEP Natural Sciences course list or the following course(s) if completed as part of the Major requirements may fulfill part or all of this requirement: CH 101/102, PY 131, BIO 181, BIO 183, FW 221

C. Humanities (6 credit hours selected from two different disciplines/course prefixes)
Choose from the University approved GEP Humanities course list or the following course(s) if completed as part of the Major requirements may fulfill part or all of this requirement: None

D. Social Sciences (6 credit hours selected from two different disciplines/course prefixes)
Choose from the University approved GEP Social Sciences course list or the following course(s) if completed as part of the Major requirements may fulfill part or all of this requirement: ARE 201 or EC 201, 205, Policy Elective (footnote 9)

E. Physical Education/Healthy Living (2 credit hours – at least one 100-level Fitness and Wellness Course)
Choose from the University approved GEP Physical Education/Healthy Living course list.

F. Additional Breadth - (3 credit hours to be selected from the following checked University approved GEP course lists)
X. Humanities/Social Sciences/Visual and Performing Arts
G. Interdisciplinary Perspectives (5-6 credit hours)
Choose from the University approved GEP Interdisciplinary Perspectives course list or the following course(s) if completed as part of the Major requirements may fulfill part or all of this requirement: None

H. Introduction to Writing (4 credit hours satisfied by completing ENG 101 with a C- or better)

The following Co-Requirements must be satisfied to complete the General Education Program requirements:
I. U.S. Diversity (USD)
Choose from the University approved GEP U.S. Diversity course list or choose a course identified on the approved GEP course lists as meeting the U.S. Diversity (USD) co-requisite. The following course(s) completed as part of the Major requirements may fulfill this requirement: None

J. Global Knowledge (GK)
Choose from the University approved GEP Global Knowledge course list or choose a course identified on the approved GEP course lists as meeting the Global Knowledge (GK) co-requisite. The following course(s) completed as part of the Major requirements may fulfill this requirement: None

K. Foreign Language proficiency - Proficiency at the FL_102 level is required for graduation.
# College of Natural Resources, NCSU  
Forestry and Environmental Resources Department  
Fisheries, Wildlife & Conservation Biology – Fisheries Concentration  
Effective: 07/2009

## FRESHMAN YEAR

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<td>NR 100 Intro to Natural Resources</td>
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<td>ENG 101 Academic Writing &amp; Research*</td>
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<td>CH 102 General Chemistry Lab*</td>
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<td>MA 131 Elements of Calculus*</td>
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<td>BIO 183 Intro Bio Cell/Mol*</td>
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<td>BIO 181 Intro Bio Eco./Div.*</td>
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<td>COM 110 Public Speaking or</td>
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<td>PE 1** Fitness &amp; Wellness*</td>
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## SOPHOMORE YEAR

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<td>FW 221 Conservation of Nat Resources*</td>
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<td>BIO 260 Evolution, Behavior, and Ecology or</td>
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<td>Communication Elective</td>
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<td>PB 360/365 Intro to Ecology/Ecology Lab*</td>
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<td>PY 131 Conceptual Physics*</td>
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<td>GEP Interdisciplinary Perspectives Requirement*</td>
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<td>FOR 172 Forest Systems Map and Mens.</td>
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<td>CH 201 Chemistry – A Quantitative Science</td>
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**Total:** 16

## JUNIOR YEAR

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<td>GN 311 Principles of Genetics</td>
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<td>FW 411 Human Dimensions of Wildlife</td>
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<td>ST 311 Intro to Statistics*</td>
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<td>Technology Elective</td>
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**Total:** 16

## SUMMER

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<td>FW 311 Wildlife Inventory and Mgmt.</td>
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<td>FW 312 Fisheries Techniques and Mgmt.</td>
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<tr>
<td>FW 313 Mountain Wildlife Eco. and Mgmt.</td>
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<td>FW 314 Coastal Fish Eco. and Mgmt.</td>
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**Total:** 6

## SENIOR YEAR

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<td>Quantitative Elective*</td>
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<td>Physical Science Elective*</td>
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<td>BIO 419 Limnology</td>
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**Total:** 14

Minimum Credit Hours Required for Graduation* : 126
Major/Program Footnotes:

1. Students with appropriate math skills are encouraged to take the math sequence MA 141 & 241
2. Students wishing to take a 2-course organic chemistry sequence should take CH 221/222 & CH 223/224
3. Select from ENG 214, ENG 215, ENG 216, COM 201, COM 211, COM 226, COM 301, COM 302
4. Students wishing to take a 2-course physics sequence should take PY 211 & PY 212
5. Select from ET 252, NR 300, PRT 462
6. Select from FOR 252, FOR 304, FOR 420, FW 404, FW 453, MEA 200/210, MEA 220, MEA 250/251, MEA 549, PB 200, ZO 515, ZO 586/587
7. Select from MA 231, MA 241, CSC 200, ST 311
8. Select from BIO 250, BIO 402, BIO 403, BIO 410, BIO 422, BIO (ENT) 425
9. Select from PY 212, CH 223, MEA 100, MEA 130/135, MEA 200/210, MEA 220, MEA 250/251

* General Education Program (GEP) requirements and GEP Footnotes:
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*Courses/groupings in the above display with an asterisk may fulfill all or part of a GEP requirement. See categories below.

A. Mathematical Sciences (6 credit hours – one course with MA or ST prefix)
Choose from the University approved GEP Mathematical Sciences course list or the following course(s) if completed as part of the Major requirements may fulfill part or all of this requirement: MA 131, ST 311

B. Natural Sciences (7 credit hours – include one laboratory course or course with a lab)
Choose from the University approved GEP Natural Sciences course list or the following course(s) if completed as part of the Major requirements may fulfill part or all of this requirement: CH 101 and CH 102, PY 131, BIO 181, BIO 183, FW 221, PB 360 and PB 365 or BIO 260

C. Humanities (6 credit hours selected from two different disciplines/course prefixes)
Choose from the University approved GEP Humanities course list or the following course(s) if completed as part of the Major requirements may fulfill part or all of this requirement: None

D. Social Sciences (6 credit hours selected from two different disciplines/course prefixes)
Choose from the University approved GEP Social Sciences course list or the following course(s) if completed as part of the Major requirements may fulfill part or all of this requirement: ARE 201 or EC 205, NR 460

E. Physical Education/Healthy Living (2 credit hours – at least one 100-level Fitness and Wellness Course)
Choose from the University approved GEP Physical Education/Healthy Living course list.

F. Additional Breadth (3 credit hours to be selected from the following checked University approved GEP course lists)
X. Humanities/Social Sciences/Visual and Performing Arts

G. Interdisciplinary Perspectives (5-6 credit hours)
Choose from the University approved GEP Interdisciplinary Perspectives course list or the following course(s) if completed as part of the Major requirements may fulfill part or all of this requirement: None

H. Introduction to Writing (4 credit hours satisfied by completing ENG 101 with a C- or better)

The following Co-Requisites must be satisfied to complete the General Education Program requirements:

I. U.S. Diversity (USD)
Choose from the University approved GEP U.S. Diversity course list or choose a course identified on the approved GEP course lists as meeting the U.S. Diversity (USD) co-requisite. The following course(s) completed as part of the Major requirements may fulfill this requirement: None

J. Global Knowledge (GK)
Choose from the University approved GEP Global Knowledge course list or choose a course identified on the approved GEP course lists as meeting the Global Knowledge (GK) co-requisite. The following course(s) completed as part of the Major requirements may fulfill this requirement: None

K. Foreign Language proficiency - Proficiency at the FL_102 level is required for graduation.
### College of Natural Resources, NCSU
Forestry and Environmental Resources Department
Fisheries, Wildlife & Conservation Biology – Wildlife Concentration
Effective: 07/2009

#### FRESHMAN YEAR

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<td>BIO 181 Intro Bio Ecol/Div*</td>
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<td>COM 110 Public Speaking or</td>
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<td>COM 112 Interpersonal Communication</td>
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<td>FOR 172 Forest Systems Map and Mens.</td>
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**Total: 16**

#### SOPHOMORE YEAR

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<td>FW 353 Wildlife Management</td>
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**Total: 14**

#### JUNIOR YEAR

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<td>FW 314 Coastal Fish Eco. and Mgmt.</td>
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**Total: 6**

#### SENIOR YEAR

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<td>Wildlife Elective’</td>
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<td>FW (BIO) 420 Intro to Fisheries Science</td>
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**Total: 14-15**

Minimum Credit Hours Required for Graduation*: 125
Major/Program Footnotes:

1. Students with appropriate math skills are encouraged to take the math sequence MA 141 & 241
2. Select from ENG 214, ENG 215, ENG 216, COM 201, COM 211, COM 226, COM 301, COM 302
3. Students wishing to take a 2-course physics sequence should take PY 211 & PY 212
4. Select from MA 231, MA 241, CSC 200
5. Students wishing to take a 2-course organic chemistry sequence should take CH 221/222 & CH 223/224
6. Select from PB 220, PB 250, PB 403, PB 405
7. Select from ENT 201, ENT 402, ENT 425, FOR 252, FOR 304, SSC 200, ET 252, NR 300, PRT 462
8. Select from BIO 410, ZO 501, ZO 542, ZO 544
9. Select from CH 201/202, CH 223, CH 323, MEA 100/100L, MEA 130/135, MEA 200, MEA 210, MEA 220, MEA 250/251, PY 212

* General Education Program (GEP) requirements and GEP Footnotes:
To complete the requirements for graduation and the General Education Program, the following category credit hours and co-requisites must be satisfied. University approved GEP course lists for each of the following categories can be found at http://oucc.ncsu.edu/gep-courses.
*Courses/groupings in the above display with an asterisk may fulfill all or part of a GEP requirement. See categories below.

A. Mathematical Sciences (6 credit hours – one course with MA or ST prefix)
Choose from the University approved GEP Mathematical Sciences course list or the following course(s) if completed as part of the Major requirements may fulfill part or all of this requirement: MA 131, ST 311

B. Natural Sciences (7 credit hours – include one laboratory course or course with a lab)
Choose from the University approved GEP Natural Sciences course list or the following course(s) if completed as part of the Major requirements may fulfill part or all of this requirement: CH 101 and CH 102, PY 131, BIO 181, BIO 183, FW 221, PB 360 and PB 365 or BIO 260

C. Humanities (6 credit hours selected from two different disciplines/course prefixes)
Choose from the University approved GEP Humanities course list or the following course(s) if completed as part of the Major requirements may fulfill part or all of this requirement: None

D. Social Sciences (6 credit hours selected from two different disciplines/course prefixes)
Choose from the University approved GEP Social Sciences course list or the following course(s) if completed as part of the Major requirements may fulfill part or all of this requirement: ARE 201 or EC 205, NR 460

E. Physical Education/Healthy Living (2 credit hours – at least one 100-level Fitness and Wellness Course)
Choose from the University approved GEP Physical Education/Healthy Living course list.

F. Additional Breadth (3 credit hours to be selected from the following checked University approved GEP course lists)

G. Interdisciplinary Perspectives (5-6 credit hours)
Choose from the University approved GEP Interdisciplinary Perspectives course list or the following course(s) if completed as part of the Major requirements may fulfill part or all of this requirement: None

H. Introduction to Writing (4 credit hours satisfied by completing ENG 101 with a C- or better)

The following Co-requirements must be satisfied to complete the General Education Program requirements:

I. U.S. Diversity (USD)
Choose from the University approved GEP U.S. Diversity course list or choose a course identified on the approved GEP course lists as meeting the U.S. Diversity (USD) co-requirette. The following course(s) completed as part of the Major requirements may fulfill this requirement: None

J. Global Knowledge (GK)
Choose from the University approved GEP Global Knowledge course list or choose a course identified on the approved GEP course lists as meeting the Global Knowledge (GK) co-requirette. The following course(s) completed as part of the Major requirements may fulfill this requirement: None

K. Foreign Language proficiency - Proficiency at the FL_102 level is required for graduation.
B. Transfer Students

The Department of Forestry and Environmental Resources accepts NCSU students with a minimum 2.1 GPA and students from other accredited colleges and universities with good academic records (minimum 2.1 GPA on a 4.0 scale is preferred) as transfers into its ET, FOM, NR and SFW curricula. Students at community colleges, junior colleges, or other baccalaureate institutions who plan to transfer to one of the department's degree programs should closely follow the desired curriculum by taking the equivalent courses available. Only equivalent courses will be credited to the appropriate degree program after enrolling at NCSU and the time required to complete the degree will depend on the courses remaining in the degree track. Students applying for the Forest Management curriculum must have at least 30 credits equivalent to those in the freshman and sophomore years and must transfer to NCSU in the fall of the sophomore year in order to complete the courses required for summer camp. Questions about transfer procedures or courses should be directed to the following faculty members:

- Gary Blank, Director of Undergraduate Programs  
  5229 Jordan Addition, 919-515-7566, gary_blank@ncsu.edu
- Bronson Bullock, Coordinator of the Forest Management Program  
  3102 Jordan Hall, 919-513-1248, bronson_bullock@ncsu.edu
- George Hess, Coordinator of the Natural Resources Program  
  5233 Jordan Addition, 919-515-7437, george_hess@ncsu.edu
- Terrie Litzenberger, Coordinator of the Environmental Technology and Management Program; 2227 Jordan Addition, 919-515-7581, terrie_litzenberger@ncsu.edu
- Lara Pacifici, Undergraduate Coordinator of the Fisheries, Wildlife, and Conservation Biology Program; Turner House, 919-513-0408, llbrongo@ncsu.edu

C. Placement Procedures, 2012-2013

This information can be found at http://admissions.ncsu.edu/find-stuff/placement.php

1. Mathematics Placement

Successful completion of freshman year mathematics is one of the best early indicators of ultimate graduation from NC State. For that reason, we require admitted freshmen to take a test to determine proper placement in math prior to attending New Student Orientation and registering for fall classes.

One option is to take the SAT Subject Test - Mathematics Level 2 in the spring prior to attending orientation and have your scores reported electronically to NC State (code #5496). More information about test registration and deadlines is available at http://www.collegeboard.com.

Alternatively, you may take the NC State online Mathematics Skill test. To ensure proper course placement you should plan to complete this assessment by May 21, 201132. To login and take the test you will need your Unity ID and password, which is assigned upon acceptance and
displayed on your WolfPAW application status screen. There is no charge for this test, which is available at

https://www.webassign.net/ncsu/math.html

If you do not take the "SAT Subject Test - Mathematics Level 2" or the "NC State online Mathematics Skill test" you will not be allowed to register for a math course, which could result in a lower math placement and adversely affect your fall schedule.

The only exceptions to the placement test requirements will be for:

- students who have College Board Advanced Placement Calculus scores of 2 or higher
- students who have completed transferable math credits through dual enrollment at a college or university which serve as necessary pre-requisite
- students enrolled in a 2-year Agricultural Institute program (separate math placement testing will be conducted at Orientation).

For more information about placement in Math contact:

- Dr. John Griggs, Dept. of Mathematics, at 919-513-2288 or at jgriggs2ncsu.edu.

2. First Year Writing Placement

You will take either ENG 101: Academic Writing and Research, or ENG100: Introduction to Academic Writing AND ENG 101 during your first year at the University, unless you are exempt based on standardized test scores submitted as part of your application process. Students with exceptionally high scores on standardized tests may choose to participate in the portfolio review process for possible exemption from the first-year writing requirement. All first-year students should visit the placement chart:

http://english.chass.ncsu.edu/undergraduate/first_year_writing/fy_writing_placement.php to determine:

- If they should complete the online, directed self-placement assessment for possible enrollment in ENG 100 or ENG 101
- If they are eligible to apply for exemption from the ENG 101 requirement by submitting a portfolio of their writing for faculty review
- If they are exempt from ENG 101 based on SAT, ACT, AP, or IB scores submitted to NCSU as part of their application process

Students with transfer credits in composition courses, questions about the process, or any other questions related to first-year writing courses should contact Ms. Danielle Carr at firstyearwriting@ncsu.edu
3. Foreign Language Requirement and Placement

Students at NC State must demonstrate competency at the Elementary II level in a foreign language (FL* 102) as a requirement for graduation. Students who do not meet the proficiency requirement as determined by a review of their high school record by the Office of Undergraduate Admissions, two years of high school study of the same language with a grade of “C” or better in each of the two years, must take a placement test. Computerized placement tests in French, German, Spanish, and Latin, are offered during Orientation.

We strongly recommend that students who take the SAT Subject Test in Languages do so in their junior or senior year of high school.

For further details regarding the foreign language requirement, and placement testing, please visit: http://fll.chass.ncsu.edu/academics/placement.php

If you have further questions, please contact Dr. Dudley Marchi, Associate Department Head of the Department of Foreign Languages & Literature, at dmm@ncsu.edu

4. Advanced Placement Opportunities at NC State

Students at NC State may receive placement in advanced courses and accelerate their studies through the College Board Advanced Placement Program (AP), the International Baccalaureate Program (IB), the College Level Examination Program (CLEP), or NC State University departmental placement exams.

Each year nearly fifty percent of incoming freshmen at NC State present College Board Advanced Placement (AP) scores to receive advanced placement and/or credit. Typically, students who score 3.4, or 5 on AP exams can receive advanced placement and/or credit. (Some exams may require a higher minimum score for placement or credit.)

NC State also recognizes the International Baccalaureate (IB) program. Typically, students can earn advanced placement and/or college credit with scores of 5, 6, or 7 on Higher Level exams. (Some exams may require a higher minimum score for placement or credit.) Students will be granted placement or credit on a course-by-course basis, depending upon individual exam scores, rather than on the basis of completion of the IB Diploma.

Students may also earn credit through the College Board's College Level Examination Program (CLEP). Students may earn placement or credit for exam scores of 50 or higher, although credit is not awarded for many CLEP tests.

In order to receive placement or credit for AP, IB, and/or CLEP exams, students must have their official exam scores submitted to the Office of Undergraduate Admissions directly from the testing agency. Scores will not be accepted from high school or college transcripts.

D. Science Requirements

Because forestry, environmental technology, environmental sciences, and natural resources management apply scientific principles to the management of natural ecosystems, the FOM, ET, SFW, and NR curricula require a solid foundation in the basic physical and biological sciences. Courses in biology, physics, botany, chemistry and zoology are required to provide a foundation needed for the core courses in forestry. It is important that all of the basic science courses be
taken before the end of the sophomore year because mastery of their contents is fundamental to an understanding of the advanced technical courses that follow in the junior and senior years.

E. FOM Freshman and Sophomore Courses, Course Sequences, and Prerequisites

NR 100 (Introduction to Natural Resources) and WPS 202 (Wood Structures and Properties) are taken in the Fall of the Freshman year. FOR 172 (Forest Systems Mapping and Mensuration I) and FOR 339 (Dendrology) are taken in the Fall of the sophomore year. FOR 260 (Forest Ecology) is taken in the Spring of the sophomore year. The Spring semester of each year, forestry students are required to take a professional development course from the following: FOR 150, FOR 250, FOR 350 and FOR 450

Note:
Students enrolled in the Forest Management curriculum must follow the curriculum and make reasonable progress toward the degree to complete their degree requirements in four years.

A prerequisite course is one that provides important background knowledge that is essential to success in a course. The prerequisite courses listed in the course descriptions in the Undergraduate Catalog for a specific course must be successfully completed (with a C or better grade in many cases) before a student may enroll in the specific course.

The FOM curriculum has a "building block" progression based on sequencing courses in several topical areas and meeting the prerequisites required for many courses. All courses should be taken in the semester scheduled and in the order noted in the curriculum insofar as possible. Deviations should be discussed and cleared with your advisor. The courses in each semester of the junior year must be taken as a concurrent group. Students should be aware of the prerequisites for all courses and be aware of courses that are taught only once per year in a particular semester; see course descriptions in the Undergraduate Catalog. Absolute prerequisites are listed below:

<table>
<thead>
<tr>
<th>Course</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>MA 114</td>
<td>MA 101</td>
</tr>
<tr>
<td>MA 121</td>
<td>MA 107 or 111</td>
</tr>
<tr>
<td>MA 141</td>
<td>MA 111 with C or better</td>
</tr>
<tr>
<td>CH 101</td>
<td>Eligibility for MA 107 or MA 111 with a C or better</td>
</tr>
<tr>
<td>CH 201</td>
<td>CH 101 with C or better</td>
</tr>
<tr>
<td>PY 211</td>
<td>MA 111</td>
</tr>
<tr>
<td>SSC 200</td>
<td>CH 101</td>
</tr>
<tr>
<td>ARE 201</td>
<td>MA 111</td>
</tr>
</tbody>
</table>

Students who must take a remedial math should discuss curriculum planning with your advisor prior to the Fall pre-registration period and work out a plan for the freshman and sophomore years. Rising sophomores who have not completed all freshman courses are urged to attend summer school to catch up with the curriculum schedule.
The Forest Management curriculum requires that each student attend a summer camp after the Sophomore year. Students in the Fisheries, Wildlife, & Conservation Biology curricula are required to attend summer camp after their Junior year. This camp is a full-time residential program that lasts 9 weeks. Students register for the regular NCSU summer school session but live, learn, and work on the University’s 2,400-acre Hill Demonstration Forest, located 14 miles north of Durham, NC. Specific objectives of this Camp experience include:

1) To provide instruction in ecosystem concepts, structure and function of plant and animal communities, management practices, and practical field skills.

2) To introduce students to a variety of realistic work environments and practices to enable them to better evaluate forestry as a career.

3) To expand the students’ practical knowledge in a variety of subjects related to the curriculum, and enhance their ability to understand and apply subjects covered in the advanced professional courses.

4) To enhance students’ leadership abilities and professionalism and provide practical experience in teamwork.

At the Camp, students live in rustic but modern cottages and eat in a mess hall which serves three hot meals daily. Coursework is a combination of classroom instruction and applied outdoor exercises that meet 8 hours/day Monday - Friday. The Camp program consists of the following courses, depending on your curriculum. Students must achieve a C or better in each:

### List of courses, credits, and instructors for Summer Camp

#### Forestry Camp

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>Credits</th>
<th>Weeks</th>
<th>Instructor</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOR 204</td>
<td>Silviculture</td>
<td>2</td>
<td>7,9</td>
<td>Cox</td>
</tr>
<tr>
<td>FOR 261</td>
<td>Forest Communities</td>
<td>2</td>
<td>4,10</td>
<td>Braham</td>
</tr>
<tr>
<td>FOR 264</td>
<td>Forest Wildlife</td>
<td>1</td>
<td>4</td>
<td>Moorman</td>
</tr>
<tr>
<td>FOR 265</td>
<td>Fire Management</td>
<td>1</td>
<td>6</td>
<td>Roise</td>
</tr>
<tr>
<td>FOR 273</td>
<td>Mapping &amp; Mensuration</td>
<td>3</td>
<td>1,2,5</td>
<td>Bullock</td>
</tr>
</tbody>
</table>

#### Fisheries/Wildlife/Conservation Biology Camp

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>Credits</th>
<th>Weeks</th>
<th>Instructor</th>
</tr>
</thead>
<tbody>
<tr>
<td>FW 311</td>
<td>Fisheries/Wildlife Inventory &amp; Mgmt</td>
<td>3</td>
<td>2,3,4</td>
<td>DePerno</td>
</tr>
<tr>
<td>FW 312</td>
<td>Fisheries Techniques &amp; Mgmt</td>
<td>1</td>
<td>5</td>
<td>Kwak</td>
</tr>
<tr>
<td>FW 313</td>
<td>Mountain Wildlife Ecology &amp; Mgmt</td>
<td>1</td>
<td>6</td>
<td>DePerno</td>
</tr>
<tr>
<td>FW 314</td>
<td>Marine Fisheries</td>
<td>1</td>
<td>1</td>
<td>Buckel</td>
</tr>
</tbody>
</table>

Grading is based on the student's performance both individually and as a member of a team, on written reports, and on examinations.
Costs include summer school tuition and fees for 9 credits, a camp fee for costs of meals at Slocum Camp and room and board for trips to the Coastal Plain and Mountains and required equipment, textbooks, and supplies. For planning purposes, Forestry/Fish & Wildlife Summer Camp 2012 costs are shown below. **These costs are estimated using Spring 2013 rates and fees, as Tuition is not set by the Department.**

<table>
<thead>
<tr>
<th>Camp Fees:</th>
<th>FOM</th>
<th>SFF/SFW</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tuition and Fees:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resident FOM</td>
<td>$2155.50</td>
<td></td>
</tr>
<tr>
<td>Non-Resident FOM</td>
<td>$7092.37</td>
<td></td>
</tr>
<tr>
<td>Resident SFF/SFW</td>
<td>$1437.00</td>
<td></td>
</tr>
<tr>
<td>Non-Resident SFF/SFW</td>
<td>$4728.25</td>
<td></td>
</tr>
<tr>
<td>Misc. charges for textbooks, supplies, etc.</td>
<td>FOM</td>
<td>SFF/SFW</td>
</tr>
<tr>
<td></td>
<td>~$560.00</td>
<td>~$466.00</td>
</tr>
</tbody>
</table>

Camp instruction is by faculty of the College of Natural Resources, assisted by qualified assistants. Administrative & Instructional Staff are:

- Dr. Jeffrey Buckel  
  Marine Fisheries
- Dr. Bronson Bullock  
  Mapping and Mensuration
- Dr. Richard R. Braham  
  Dendrology
- Mr. Joe Cox  
  Silviculture
- Dr. Chris DePerno  
  Wildlife
- Mr. Mark Johns  
  Wildlife
- Dr. Thomas Kwak  
  Inland Fisheries
- Dr. Chris Moorman  
  Wildlife
- Dr. Joe Roise  
  Fire Management & Hydrology

Because Forestry Summer Camp is a critical element of the "building block" progression of the Forest Management Curriculum, adequate preparation for the camp is important to succeed there, as well as for preparation for the core junior - senior courses. The students attending summer camp should try to complete all Freshman and Sophomore courses.

FOM sophomores who are eligible for Summer Camp, are notified in January-February of each year. Arrangements for enrollment into Summer Camp are announced at a meeting held during March each year. Students expecting to attend summer camp must attend this meeting.

A student receiving a grade of D or F in any course at summer camp must make up those hours in order to satisfy graduation requirements. The make-up can be done by retaking the course or portions thereof or a substitute course as required by the course instructor.
G. FOM Junior-Senior Course Sequences and Prerequisites

Forestry Summer Camp is a General Prerequisite for all Junior and Senior Forestry courses. As with the freshman-sophomore courses, the junior-senior courses have a building block sequence to which the student must adhere. All of the courses of the Fall semester of the junior year must be taken as a concurrent group and that whole group of courses is prerequisite to the courses of the Spring semester of the junior year that also must be taken as a concurrent group. In turn, the group of Spring semester junior courses are prerequisite to FOR 405.

Absolute prerequisites for junior-senior core courses are outlined below. Forestry core courses require a C or better.

<table>
<thead>
<tr>
<th>Course</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOR 303</td>
<td>BO 200, CH 101/102, FOR 260, SSC 200 &amp; Summer Camp</td>
</tr>
<tr>
<td>FOR 304</td>
<td>FOR 303, 319, 353, ST 311</td>
</tr>
<tr>
<td>FOR 319</td>
<td>ARE 201, summer camp</td>
</tr>
<tr>
<td>FOR 353</td>
<td>MA 114, summer camp</td>
</tr>
<tr>
<td>FOR 374</td>
<td>FOR 273, ST 311, MA 121, MA 114</td>
</tr>
<tr>
<td>FOR (PP) 318</td>
<td>Freshman Biology/Botany Course</td>
</tr>
<tr>
<td>FOR (ENT) 402</td>
<td>Freshman Biology/Botany Course</td>
</tr>
<tr>
<td>FOR 405</td>
<td>FOR 319, 374, 304</td>
</tr>
<tr>
<td>FOR 406</td>
<td>FOR 405, 460</td>
</tr>
</tbody>
</table>

H. NR Course Sequences and Prerequisites

The NRE and NRP curricula have a broader complement of upper level courses and are somewhat more flexible than FOM, and ESH. However, the curriculum structure is purposeful and should be followed as closely as possible. Many of the 100, 200, and 300 level courses are taught both semesters (and some in summer school) but some of the 300 level courses and all of the 400 level courses are taught only in the semester shown on the curriculum.

<table>
<thead>
<tr>
<th>Course</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>CH 101</td>
<td>Eligibility for MA 107 or MA 111 with C or better</td>
</tr>
<tr>
<td>CH 201</td>
<td>CH 101 with C or better</td>
</tr>
<tr>
<td>MA 131</td>
<td>MA 107 or 111</td>
</tr>
<tr>
<td>MA 141</td>
<td>MA 111 with C or better</td>
</tr>
<tr>
<td>ARE 201</td>
<td>MA 111</td>
</tr>
<tr>
<td>PY 211</td>
<td>MA 111</td>
</tr>
<tr>
<td>SSC 200</td>
<td>CH 101</td>
</tr>
<tr>
<td>ARE 336</td>
<td>ARE 201</td>
</tr>
<tr>
<td>BO 360/365</td>
<td>FOR 212 or ZO 150</td>
</tr>
<tr>
<td>NR 300</td>
<td>ST 311, BO 360 Helpful; SSC 200, FOR 353</td>
</tr>
<tr>
<td>NR 360</td>
<td>NR 301</td>
</tr>
<tr>
<td>NR 401</td>
<td>NR 360</td>
</tr>
<tr>
<td>NR 484</td>
<td>NR 300 or ET 310</td>
</tr>
</tbody>
</table>

The 400 level courses of the senior year in NRE and NRP are a capstone group that requires completion of the majority of the lower level courses.
I. Additional Graduation Requirements

Students in the FOM curriculum must earn a minimum grade of C- in ENG 101 and maintain a Major Grade Point Average (MGPA) of 2.0 or better in all forestry courses. A student with an MGPA less than a C will be allowed to proceed with the curriculum, but must improve his/her average to a C or better in order to graduate. If the student has more than one F in his/her forestry courses in a given semester, that student will not be allowed to proceed with the curriculum until those courses are repeated with a C or better grade in order to meet the MGPA requirement.
CH. 4. ELECTIVE COURSES AND PROGRAMS: ELECTIVES, DEGREE MINORS, DUAL DEGREES, COOPERATIVE EDUCATION PROGRAM

A. General

The Forest Management, Environmental Technology & Management, Fisheries, Wildlife & Conservation Biology and the Natural Resources curricula are designed to provide students with a broad education that prepares them not only for a career but to face the complexities of modern life, to enjoy its many amenities and to serve as good citizens of society. The Humanities and Social Science electives in the curricula provide students the opportunities to take courses that support their major, broaden their education, or expand their knowledge in areas of personal interest. Degree Minors, Dual Degrees, and the Cooperative Education Program provide specific opportunities for broadening the scope of the major, for developing a specialty associated with the major, or in the case of the Co-op Program, gaining valuable on-the-job experience. A certain degree of flexibility may allow certain students, particularly those with good academic records, in making course substitutions within the major to support dual degrees, specializations, or graduate school planning.

B. NCSU Foreign Language Requirement for 2013-2014

1) Students are required to demonstrate competency at the FL_102 level in a modern or classical foreign language as a requirement for graduation from NCSU.

2) Freshmen may satisfy this requirement before entering NCSU in one of the following ways:

   a) Score of 510 or above on the College Board Foreign Language Achievement Test (SAT II)
   b) Completing 2 years of high school study of the same language with a grade better than a C- in each of the 2 years
   c) Passing grade at the FL*102 level (letter-grade required)
   d) Placement into FL8201 by examination

3) Proficiency at the FL_102 level after entering NCSU may be demonstrated as follows:

   a) Completion of a FL_102 course with a passing grade of S, D or better.
   b) Transfer credit equivalent to FL_102 from an accredited institution or University-approved study abroad program.
   c) Placement into FL_201 or higher on the placement test in the languages offered by the Department of Foreign Languages and Literatures

4) Advanced placement credit will be awarded as follows:

   a) Students earning a score of 4 on the Advanced Placement Foreign Language Test in high school will have met the university proficiency requirement and will obtain three hours of advanced placement credit for FL_201 upon completion of FL_202 with a grade of C- or better on the first attempt. Students earning a score of 5 on the Advanced Placement
Foreign Language Test can obtain six hours of advanced placement credit for FL_201 and 202 upon completion of a 300-level course with a grade of C- or better on the first attempt.

b) Students who place into FL_201 on the basis of the SAT II Test or the NCSU Placement Test will have met the FL 201 requirement and are eligible to receive three hours of advanced placement credit by enrolling in the course into which they placed and earned a grade of C- or better on the first attempt. Students completing FL 202 with a C- or better on the first attempt will receive credit for FL 201 and FL 202.

5) Native speakers of languages other than English do not take the NCSU Placement Test and do not receive credit for FL 101-102 in their native language. They do, however, fulfill the foreign language proficiency requirement and can receive certification by contacting the Associate Department Head.

6) FL_101 or 102 in a foreign language other than the one in which proficiency is certified may be used to fulfill the one semester advanced writing/speech/foreign language general education requirement or may be counted as a free elective.

7) American Sign Language (ASL) is accepted in satisfying the foreign language proficiency requirement with 2 years of ASL in high school with a grade “C” or better in each year.

C. General Education Program Requirements

As of Summer Session II, 2009, undergraduates at NCSU are required to have 39 credit hours in the General Education category. Those requirements are broken down as follows:

GEP Category Requirements:
- Mathematical Sciences – 6 credit hours. At least one course must have an MA or ST prefix.
- Natural Sciences – 7 credit hours. At least one laboratory course or course with a laboratory.
- Humanities – 6 credit hours. Selected courses must be from two different disciplines.
- Social Sciences – 6 credit hours. Selected courses must be from two different disciplines.
- Additional Breadth category – 3 credit hours. Select Additional Breadth course from either the Humanities/Social Sciences/Visual and Performing Arts course lists OR Mathematics/Natural Sciences/Engineering courses lists, depending on your Major.
- Interdisciplinary Perspectives – 5 credit hours
- Health and Exercise Studies – 2 credit hours. Must include one Fitness and Wellness HESF 100-level course.
- ENG 101 – 4 credit hours of ENG 101 for the Introduction to Writing requirement. Successful completion requires a C- or better.

GEP Co-Requisite Requirements:
- U.S. Diversity – 1 course (no credit hour requirement)
- Global Knowledge – 1 course (no credit hour requirement)
• FL* 102 level proficiency
• Communication in the Major (requirement fulfilled within the curriculum requirements)
• Technology Fluency (requirement fulfilled within the curriculum requirements)

The requirement information can be found by visiting this link:

http://oucc.ncsu.edu/gep-reqs

The general education course lists are continuously updated. For a complete listing of GEP courses, broken down by category, please visit this link:

http://oucc.ncsu.edu/gep-courses

D. Leadership and Teamwork

An important component of a professional education is learning how to lead others and how to work effectively in teams. Much of that learning occurs in both formal and informal situations in courses in both the FOM and NR curricula where the students work in teams. A program with more formal educational activities to assist in the development of leadership and teamwork skills has been incorporated into the Forest Management curriculum. Specific instruction and practice in leadership and teamwork concepts and skills are incorporated into several of the courses. Of course, all students are encouraged to consider taking courses in the Leadership Development Series as a routine part of their course selection each semester. There is a nominal fee of $5.00 for each leadership module, but the College of Natural Resources pays a group fee each semester so that students in this college may take an unlimited number of leadership series modules free of charge. Visit the Center for Student Leadership, Ethics & Public Service, 344 Harrelson Hall, to obtain a Leadership Development Series schedule or to use the library of leadership resources and reference materials. All courses completed are recorded on the leadership transcript that is maintained by the University Registrar and is issued as part of the academic transcript. For more information see the web page: csleps.dasa.ncsu.edu/leadership/lds

E. Degree Minor Programs

Minor programs are available in a number of academic departments and interdisciplinary programs. Such minors provide the student with the opportunity to take a group of courses so as to develop greater knowledge and expertise in a defined area of study. A minor may be particularly helpful if the student wishes to take course work in a field distantly removed from ETM, FOM, SFW, or NR yet which complements the major and provides greater depth than would be obtained by taking a sampling of courses in the other area. If a student minors in a given area, a statement to that effect appears on the university transcript.

A list of approved minors, together with the address and phone number of the sponsoring department can be found at: http://oucc.ncsu.edu/minors
Examples of the courses required for popular minors taken by students enrolled in the Department of Forestry and Environmental Resources are:

1. Minor in Forest Management (15 credit hours)

Open to all students enrolled at NCSU except FOM majors.

Requirements:
- Requires completion of 15 credit hours, selected from each of two categories in one of the following options
- A grade of “C” or better is required in all courses in the minor

Option 1

Required Courses (9 credit hours):
- FOR 172 Forest System Mapping and Mensuration 1 (2 cr)
- FOR 339 Dendrology (4 cr)
- FOR 252 Introduction to Forest Science (3 cr)

Elective Courses (6 credit hours) – Take any two (2) of the following courses:
- FOR 248 Forest History, Technology and Society (3 cr)
- FOR 260 Forest Ecology (3 cr)
- FOR 303 Silvics and Forest Tree Physiology (3 cr)
- FOR 330 North Carolina Forests (3 cr)
- FOR 353 Air Photo Interpretation and Photogrammetry (3 cr)
- FOR 404 World Forestry (3 cr)
- NR 460 Renewable Natural Resource Management and Policy (3 cr)

Option 2

Required Courses (15 credit hours):
- FOR 172 Forest System Mapping and Mensuration 1 (2 cr)
- FOR 339 Dendrology (4 cr)

Attend Forestry summer camp and take the following five (5) courses (9 hours):
- FOR 204 Silviculture (2 cr)
- FOR 261 Forest Communities (2 cr)
- FOR 264 Forest Wildlife (1 cr)
- FOR 265 Fire Management (1 cr)
- FOR 273 Forest System Mapping and Mensuration II (3 cr)

For additional information, contact Dr. Gary Blank, Department of Forestry and Environmental Resources, gary_blank@ncsu.edu, 919-515-7566.
2. Minor in Wetlands Assessment

The Undergraduate Minor in Wetland Assessment is an interdisciplinary, interdepartmental minor that is designed to provide NCSU students with the requisite knowledge and skills needed for entry level competence in the field of wetland delineation and assessment. Soils, hydrology, and plant identification courses of the minor build the scientific background and skills needed to understand the structure and functions of wetland ecosystems and to apply assessment protocols. The capstone course, NR 421 Wetland Assessment, Delineation, and Regulation, focuses on further development of knowledge and skills in applying wetlands assessment, delineation, and regulation procedures.

Requirements:
- The minor in Wetlands Assessment consists of 17 credit hours (5 courses) as specified below:

Required Courses:
- BO 405 Wetland Flora (3 cr)
- FOR/NR 420 Watershed and Wetlands Hydrology (4 cr)
- SSC 452 Soil Classification (4 cr)
- SSC 470 Wetland Soils (3 cr)
- NR 421 Wetland Assessment, Delineation, and Regulation (3 cr)

Students interested in this minor should contact Dr. Ryan Emanuel, Department of Forestry and Environmental Resources, ryan_emanuel@ncsu.edu, 919-513-2511. Application forms for the minor will serve as the work plan and a copy will be forwarded to the student’s major advisor.

3. Minor in Entomology

The Department of Entomology offers an undergraduate minor in Entomology intended for students who are interested in insects, their management, and their role in the functioning of natural forests and managed forest ecosystems as well as agricultural systems. Insects represent the single largest group of animal species – they impact every facet of human life and they are a very important part of our environment.

Requirements:
- Program requires 15 semester hours
- A grade of “C-“ or better is required for all courses to fulfill the minor requirements
- Students must take ENT 425 (General Entomology-3 cr) or ENT 402 (Forest Entomology-3 cr), plus 12 hours from the elective course list below
- However, of these 12 hours of elective courses, at least 6 hours must be ENT courses

Required Course (3 credit hours):
- ENT 425 0 General Entomology (3 cr) or ENT 402 Forest Entomology (3 cr)
Elective Courses (12 credit hours) At least 2 of the 2 courses must be ENT courses:

- ENT 201 Insects and People (3 cr)
- ENT 203 Intro to Honey Bee and Beekeeping (3 cr)
- ENT 401/501 Advanced Beekeeping (3 cr)
- ENT 402 Forest Entomology (3 cr)
- ENT 425 General Entomology (3 cr)
- ENT 492 External Learning Experience (1-6 cr)
- ENT 493 Special Problems in Entomology (1-6 cr)
- ENT 495 Special Topics in Entomology (1-3 cr)
- ENT 502 Insect Systematics (4 cr)
- ENT 503 Insect Morphology and Physiology (4 cr)
- ENT (ZO) 509 Ecology of Stream Invertebrates (4 cr)
- ENT 550 Fundamentals of Insect Control (3 cr)
- ENT (ZO) 582 Medical and Veterinary Entomology (3 cr)
- ENT 620 Special Problems (Arranged)
- ENT 641 Agricultural Entomology Practicum (3 cr)
- ENT 720 Insect Pathology (3 cr)
- ENT 726 Biological Control of Insects and Weeds (3 cr)
- ENT 731 Insect Ecology (3 cr)
- ENT 741 Immature Insects (3 cr)
- ENT 762 Insect Pest Management in Agricultural Crops (3 cr)
- ENT (FOR) 765 Advanced Forest Entomology (3 cr)
- BO 360 Introduction to Ecology (3 cr)
- BO 365 Ecology Laboratory (1 cr)
- BO 403 Systematic Botany (4 cr)
- CS 415 Integrated Pest Management (3 cr)
- ZO 260 Ecology, Behavior, and Evolution (4 cr)
- ZO 315 General Parasitology (3 cr)
- ZO 402 Invertebrate Zoology (3 cr)
- ZO 403 Invertebrate Zoology Laboratory (1 cr)
- ZO 410 Introduction to Animal Behavior (3 cr)
- ZO 460 Aquatic Natural History Laboratory (2 cr)

For more information about the Entomology Minor, please contact Dr. John Meyer, Entomology Undergraduate Teaching Coordinator, john_meyer@ncsu.edu, 919-515-1659

4. Minor in Business Administration

Students that fulfill the requirements for a minor in Business Administration will gain an understanding of the language and basic concepts of business, fundamentals of economics, and core concepts of financial accounting. Admission to this minor is very competitive. To be eligible for consideration, a student must have at least 20 hours of coursework (not including courses in progress), with at least 15 successfully completed at NC State. Meeting these requirements does not guarantee admission to the minor. Students may NOT take minor coursework on a credit only basis.
Business Administration Core (9 credit hours):
- MIE 201 Introduction to Business Processes (3 cr)
- EC 205 Fundamentals of Economics (3 cr) (C- or better)
- ACC 210 Concepts of Financial Reporting (3 cr) (C- or better)
  **EC 205 may be replaced by EC 201 or ARE 201 with a C- or better**

General Management Focus (9 credit hours):
- BUS 305/MIE 305 Legal and Regulatory Environment (3 cr)
- MIE 310 Introduction to Entrepreneurship (3 cr)
- BUS 320 Financial Management (3 cr)
- MIE 330 Human Resource Management (3 cr)
- BUS 340 Information Systems Management (3 cr)
- BUS 360 Marketing Methods (3 cr)
- BUS 370 Operations Management (3 cr)

Entrepreneurship Focus (9 credit hours):
- MIE 310 Introduction to Entrepreneurship (3 cr)
- MIE 410 Business Opportunity Analysis (3 cr)
- MIE 411 Managing the Growth Venture (3 cr)
- MIE 412 Finance and Accounting for Entrepreneurship
- MIE 413 New Venture Planning
- MIE 416 The Legal Dynamics of Entrepreneurship
- MIE 418 Social Entrepreneurship Practicum
- MIE 419 Entrepreneurship Practicum

Students interested in applying for the Minor in Business Administration may contact the Undergraduate Programs Office at 2150 Nelson Hall, poole_undergrad@ncsu.edu, 919-515-5565.

5. Minor in Economics

The Minor in Economics is designed to help students develop a basic understanding of the principles and applications of economics. By pursuing this minor, students will develop an understanding of microeconomic and macroeconomic theory and the role of markets, understand the effects of government regulation and policy on economic behavior, learn to apply economics to regulatory social and market issues, and develop analytical skills.

Requirements:
- Requires 15 hours of economics including EC 205, EC (ARE) 301, EC 302, and two economics electives.
- GPA of 2.0 or greater
- At least three 300 level and above courses must be completed in residence at NC State
- Courses for the minor may not be taken for credit only
- All transfer credits must be approved by the Poole College of Management Office of Undergraduate Programs in 2150 Nelson Hall
**Required Courses (9 credit hours):**
- EC 205 Fundamentals of Economics (3 cr) **EC/ARE 201 may substitute for EC 205**
- EC/ARE 301 Intermediate Microeconomics (3 cr)
- EC 302 Intermediate Macroeconomics (3 cr)

**Elective Courses (6 credit hours):**
- Select two courses from any 300, 400, and/or 500 level EC/ECG Economics courses, except EC 310.

**Admission:**
The undergraduate Minor in Economics is open to all undergraduate majors outside the Department of Economics. Students interested in a minor in Economics need to complete a Minor Declaration form, available at:

[http://poole.ncsu.edu/undergraduate/academics/minors/](http://poole.ncsu.edu/undergraduate/academics/minors/)

or stop by 2150 Nelson Hall to fill out and submit the application.

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**6. Minor in Parks, Recreation, and Tourism Management**

This is offered to students interested in gaining a basic knowledge of recreation, tourism and park services, and an understanding of the benefits of leisure and recreation in our society.

**Requirements:**
- Minimum of 15 hours (5 courses) are required to complete the minor in Park, Recreation, and Tourism Management
- Students must take 6 hours of required courses and 9 hours of electives
- A grade of C- or better is required in all courses to be used towards the minor
- No more than six hours of transfer credits can be used toward the minor

**Required Courses (6 credit hours):**
- PRT 152 Introduction to Parks, Recreation, and Tourism (3 cr)
- PRT 358 The Recreation Program (3 cr) **Pre-requisite PRT 152**

**Elective Courses (9 credit hours):**
- PRT 200 Leisure Behavior, Health and Wellness
- PRT 220 Commercial Recreation and Tourism Management **Pre-requisite PRT 152**
- PRT 238 Inclusive Recreation **Pre-requisite PRT 152**
- PRT 250 Managing Park and Recreation Facilities **Pre-requisite PRT 152**
- PRT 266 Introduction to Sport Management
- PRT 315 Organization and Administration of Adventure Programs
- PRT 350 Outdoor Recreation Management **Pre-requisite PRT 152**
- PRT 407 Services, Facilities, and Event Marketing
- PRT 420 Resort Planning and Management **Pre-requisite PRT 152**
• PRT 442 Recreation and Park Interpretive Services **Pre-requisite Junior standing**
• PRT 451 Principles of Recreation Planning and Facility Development **Pre-requisite PRT 358**
• PRT 458 Special Events Planning **Pre-requisite PRT 358**
• GIS 410 Introduction to Geographic Information Systems

Admission:
Admission is competitive and applicants must have successfully completed 15 hours of coursework at NC State to be eligible for consideration. Meeting the requirements does not guarantee admission. To apply for this minor, contact Dr. Candace Goode-Vick, candace_goode@ncsu.edu, 919-513-3939

7. Minor in Wood Products

The Department of Forest Biomaterials offers a minor in Wood Products (WP) to all undergraduates enrolled in the University as degree candidates, except WP majors. The minor will provide students with basic understanding of the anatomical, physical, and mechanical properties of wood and the processes used in converting wood into the multitude of available wood products.

Requirements:
• Minimum of 17 hours required for minor
• 3 courses are required as indicated below, 2 others are elective
• Minimum grade of C must be achieved in all courses to be used toward the minor

Required Courses (11 semester hours):
• WPS 202 Wood Anatomy and Properties (3 cr)
• WPS 203 Wood Physical Properties (4 cr)
• WPS 302 Wood Processing II (4 cr)

Elective Courses (minimum of 2 required):
• WPS 205 Wood Products Practicum (5 cr)
• WPS 301 Wood Processing I (4 cr)
• WPS 309 Wood Products Processing: Facilities and Infrastructure (3 cr)
• WPS 344 Introduction to Quality Control in Wood Products (3 cr)
• WPS 441 Wood Mechanics (4 cr)
• WPS 444 Wood Composites (3 cr)

Admission:
Students interested in this minor should contact Dr. Myron Kelly, myron_kelly@ncsu.edu, 919-515-5735. The application for the minor in Wood Products has to be submitted to Dr. Kelly prior to the Pre-registration deadline for the student’s final semester.
8. Minor in Environmental Science

The Environmental Science minor allows students to connect the topics from their major to the issues that connect humans to the environment. It provides links between disciplines and provides a foundation for analysis of environmental issues.

Requirements:
- Students must complete 15 credit hours by taking three of the ES Core courses with a C- or better
- A student may not major and minor in Environmental Science

Required Courses (select three courses (9 cr) from the Environmental Science Core Course List):
- ES 100 Introduction to Environmental Science
- ES 200 Climate Change and Sustainability
- ES 300 Energy and the Environment
- ES 400 Analysis of Environmental Issues

Elective Courses (6 credit hours):
Choose two courses from one, or any, of the groups listed below.

Group I – Biological Science:
- MEA (BIO) 220 Marine Biology **this course has a pre-requisite
- FW (BIO) 221 Conservation of Natural Resources
- PB/BIO 360 Ecology ** This course has a pre-requisite
- BIO 181 Introductory Biology: Ecology, Evolution, and Biodiversity
- FOR 252 Introduction to Forest Science

Group II – Physical Science:
- MEA 101 & MEA 110 Geology I: Physical with Lab
- MEA 130 & MEA 135 Introduction to Weather and Climate with Lab
- MEA 140 Natural Hazards and Global Change
- SSC 200 Soil Science **This course has a pre-requisite**
- MEA 200 Introduction to Oceanography
- CE 373 Fundamentals of Environmental Engineering

Group III – Social Science:
- IDS 201 Environmental Ethics
- IDS 220 Coastal and Ocean Frontiers
- NR/IDS 303 Humans and the Environment
- STS 322 Technological Catastrophes
- PHI 422 Philosophical Issues in Environmental Ethics
- PS 320 U.S. Environmental Politics
- PS 336 Global Environmental Politics
- LAR 221 Introduction to Environment and Behavior
Group IV – Advanced Courses:
- MEA 300 Environmental Geology **this course has a pre-requisite**
- SSC 361 Role of Soils in Environmental Management
- NR 460 Renewable Resources Policy and Management
- ET 410 Toxic Substances and Society (formerly MDS 410)
- EC 436 Environmental Economics
- FW (BIO) 430 Fisheries and Wildlife Administration
- BIO 402 Invertebrate Zoology
- BIO 403 Invertebrate Zoology Laboratory
- HI 440 American Environmental History **this course has a pre-requisite**
- NR 406 Conservation of Biological Diversity **this course has a pre-requisite**
- SOC 450 Environmental Sociology **this course has a pre-requisite**

Admissions/Certification:
Students interested in this minor must have a minimum overall GPA of 2.0 to be admitted. The minor must be completed no later than the semester in which the student expects to graduate from their degree program. Paperwork for certification should be completed no later than during registration for the student’s final semester at NC State. To obtain the application for this minor, contact Dr. William Winner, wewinner@ncsu.edu, 919-515-5780

9. Minor in Fisheries Sciences

The minor in Fisheries Science provides students with basic ecological and management knowledge about, and will cultivate an appreciation for, the value of fish resources.

Requirements:
- Completion of 15-16 credit hours
- Overall GPA must be above 2.0

Required courses (15-16 credit hours):
- BIO 420 Introduction to Fisheries Science (3 cr)
- BIO 423 Intro Fisheries Science Lab (1 cr)
- BIO 419 Limnology (4 cr)
- BIO 441 Biology of Fishes (3 cr)
- BIO 442 Biology of Fishes Lab (1 cr)

And choose 1 of the following:
- FW 221 Conservation of Natural Resources OR BIO 360/PB 360 Ecology OR FOR 260 Forest Ecology

Elective Courses:
None

Admissions/Certification:
Students must have a GPA of 2.0 or higher to be admitted into this minor. The Fisheries minor is
10. Wildlife Sciences Minor

This minor will provide basic ecological and management knowledge about, and will cultivate an appreciation for, the value of wildlife resources. It will also provide students with an appreciation of the value of wildlife resources and the need for sound management.

Requirements:
• Completion of 16-17 credit hours
• Overall GPA must be above 2.0

Required courses (13-14 credit hours):
• FW 221 Conservation of Natural Resources (3 cr)
• BIO 360/PB 360 Ecology OR FOR 260 Forest Ecology (3-4 cr)
• FW 353 Wildlife Management (3 cr)
• FW 453 Principles of Wildlife Science (4 cr)

Elective Courses (3 credit hours):
Choose 1 course from the following list:
• FW 404 Forest Wildlife Management (3 cr)
• FW 411 Human Dimensions in Wildlife (3 cr)
• FW 460 International Wildlife Management and Conservation (3 cr)

Admissions/Certification:
Please contact Dr. Lara Pacifici, llbrongo@ncsu.edu, 919-513-0408, or Mrs. Cindy Burke, cindy_burke@ncsu.edu, 919-515-7587 for applications.

F. Dual Degree Programs

Students in FOM or NR desiring to major in a second area of interest may develop a dual baccalaureate degree program. You may enroll in a second undergraduate degree in any department of the university that will accept you as a degree candidate in the desired second degree. You should first discuss the second degree option with your assigned advisor or with another Departmental advisor (or another faculty member) who through background and experience is familiar with the degree and its advantages/disadvantages to your education and career opportunities.

To enroll in a second degree, contact the department that offers the degree and if accepted, enroll in that program as a second degree. You will be assigned an advisor in the second degree to guide you in course selection. You should also notify Mrs. Yvonne Lee, Dr. Gary Blank, and your assigned advisor in the Department. You should also provide each advisor with a current copy of the curriculum outline for the "other" curriculum and in conjunction with them, develop a plan for coordinating course selection to complete both degrees as efficiently as possible.
Dropping the second degree program is possible at any time without penalty. You will be awarded the diploma for each degree when you complete its requirements.

The number of total additional credits (in addition to the first degree) required to complete a second degree may range from as low as about 25-30 to as high as 60-65 depending on commonality of required courses, appropriate substitutions of similar courses, and use of electives in each curriculum to satisfy core courses in the other. Thus a second degree that is not very dissimilar to the first may easily be completed in one or two additional semesters. The decision to pursue a dual degree should be made as soon as possible to allow scheduling of the proper course sequences in the early semesters of each curriculum.

A specific dual degree program must be planned with the appropriate advisors. However, a sample of additional courses and credits required to complete a second degree in Wood products in conjunction with Forest Management is shown below.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>WPS 101</td>
<td>Intro. to Wood and Paper Science</td>
<td>1</td>
</tr>
<tr>
<td>WPS 240</td>
<td>Wood Products</td>
<td>3</td>
</tr>
<tr>
<td>GC 101</td>
<td>Engineering Graphics</td>
<td>2</td>
</tr>
<tr>
<td>WPS 203</td>
<td>Wood Physical Properties</td>
<td>4</td>
</tr>
<tr>
<td>WPS 205</td>
<td>Wood Products Practicum</td>
<td>5</td>
</tr>
<tr>
<td>WPS 210</td>
<td>Forest Products Internship</td>
<td>1</td>
</tr>
<tr>
<td>ENG 331</td>
<td>Comm. for Engineering and Technology</td>
<td>3</td>
</tr>
<tr>
<td>WPS 301</td>
<td>Wood Processing I</td>
<td>4</td>
</tr>
<tr>
<td>WPS 302</td>
<td>Wood Processing II</td>
<td>4</td>
</tr>
<tr>
<td>WPS 344</td>
<td>Intro. to Quality Control</td>
<td>3</td>
</tr>
<tr>
<td>WPS 350</td>
<td>Wood Products Literature</td>
<td>2</td>
</tr>
<tr>
<td>WPS 441</td>
<td>Wood Mechanics</td>
<td>4</td>
</tr>
<tr>
<td>WPS 482</td>
<td>Senior Topics in WPS</td>
<td>2</td>
</tr>
<tr>
<td>WPS 444</td>
<td>Wood Composite</td>
<td>3</td>
</tr>
<tr>
<td>WPS 450</td>
<td>Wood Industry Case Studies</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>43</strong></td>
</tr>
</tbody>
</table>

G. Cooperative Education Program

1. General information:

Cooperative Education gives students the practical experience necessary for them to fully understand the importance of what they are studying for the Cooperative Education Program is a plan created in which the student's educational goals are enhanced by carefully scheduling and integrating periods of academic study with periods of employment related to the student's field of interest.

The Co-op program in the College of Forest Resources is voluntary and includes curricula in Forest Management, Natural Resources, Environmental Technology & Management, Recreation, and Forest Biomaterials. To be eligible, students must achieve a 2.25 grade point average (GPA) out of a possible 4.0. To remain in the program, they must maintain a 2.0 GPA and perform satisfactorily in the work assignments. Most forestry Co-op employers prefer students to begin
after Summer Camp is completed, but some employers will take students into the Co-op program after the freshman year.

Mr. Joe Cox, Co-op Placement Coordinator, joe_cox@ncsu.edu, 919-515-7576
The Co-op program provides students several benefits. Some of these are:

a) Practical experience. Students have the opportunity to learn practical applications along with their classroom experiences. This practical experience often helps students with their course work by providing fuller and deeper insight to their classroom exercises as a result of having actually experienced related work. Because employers value this experience, co-op graduates have an advantage when competing for employment and they usually start at salaries higher than those of the non-cooperative education graduate.

b) Self-confidence. By the time of graduation, Co-op students have had the opportunity to develop self-confidence in actual work situations in their chosen professional field. As a result, they are not confronted suddenly with an abrupt change from an academic environment to the real world of employment.

c) Human Relations. Co-op students have the opportunity to learn directly about human relations in the business and industrial world. Such experiences are of increasing value as professionals from many areas become more involved in dealing with current sociological problems.

a) Financial. Co-op students have the opportunity to earn a substantial part of their educational expenses. Thus, the additional time and investment required in the program is offset by the students’ co-op employment earnings.

e) Improved Employment Opportunities and Earning Power. Many companies make it a practice only to hire persons with whom they have had some previous work experience through a co-op arrangement. Thus, co-op experience may be of great value in obtaining employment. In addition, University data indicate that co-op participants are more likely to obtain permanent employment immediately upon graduation and they also have higher beginning salaries than students who do not participate in co-op programs.

2. Program Entry Requirements:

a) The Cooperative Education Program is voluntary for students in the College of Natural Resources

b) Full-time enrollment during the semester prior to first work term

c) Completion of at least two semesters at NCSU (one semester for transfers and graduate students); NCSU transcript must show grades and admission to a degree program

d) Minimum GPA of 2.25 (3.00 for graduate students)
b) Attendance at a Cooperative Education orientation meeting administered by the NCSU Cooperative Education Program located at:

2100 Pullen Hall  
Box 7303  
Raleigh, NC 27695-7303  
Main Office Number: 919/515-2300  
FAX: 919/515-4210

f) In addition to meeting the minimum requirements for the Co-op Program, international students (F1 or J1 visa) must:

i) attend a practical training session at the International Student Office (ISO),
ii) complete nine months of consecutive enrollment in classes prior to beginning co-op work, and
iii) obtain written approval of their academic advisor or graduate coordinator.

Undergraduate international students may not apply for the program once they have attained senior standing unless they already have a job offer.

H. Study Abroad

There are opportunities to study abroad for the summer, for the semester, or for an entire year. You can earn credits towards your degree, and financial aid and scholarships are available. If you are interested in study abroad, you should start planning early (preferably two years in advance) in order to find the best program and to plan your courses. Students in the Department of Forestry and Environmental Resources have studied in diverse settings, including Mexico, Nicaragua, Costa Rica, Ecuador, Sweden, Finland, Nepal, and Australia. In some cases, you may want to postpone GER courses and take them while you are abroad; in other cases, you can plan to complete specific requirements of your curriculum while studying abroad. The Department of Forestry and Environmental Resources offers scholarships for study abroad on fund availability. These scholarships are due to the Study Abroad Office at the end of February.

To plan for your study abroad experience, the steps are to:

1. Visit the study abroad web site:

   [http://cnr.ncsu.edu/fer/international/study_abroad.php](http://cnr.ncsu.edu/fer/international/study_abroad.php)

2. Discuss options with your academic advisor

3. Attend one of the orientation sessions offered by the Study Abroad Office in 315 FYC Commons.

For general information, you can contact Dr. Erin Sills, Director of International Forestry Programs, 3112 Jordan Hall, erin_sills@ncsu.edu, 919-515-7784.
CH. 5 ACADEMIC DEVELOPMENT

A. General

This section covers several academic programs and policies that are particularly important to the students' development and advancement. Such policies and programs are covered in depth in the Student Handbook, in the Undergraduate Catalog and in the Advisor's Handbook (which all Advisors have). The Student Handbook and the Advisor's Handbook, available on the web, are updated annually and, thus may be more current than the Undergraduate Catalog. Also discussed here are certain departmental policies that apply to all students.

B. Academic Advising

Each undergraduate student is assigned an academic advisor. The advisor assists the student in three areas:
1) striving for academic excellence,
2) completion of the program in four years, and
3) professional development.

The entire objective of the advisor-advisee relationship is to insure that the student receives the best educational experience possible.

Incoming four-year students are assigned to an advisor when they enter NCSU. The student may stay with that advisor for the duration of his/her program at NCSU. If, for any reason, the student wishes to change advisors, that may be done by contacting Dr. Blank. In addition, when a student makes a decision regarding use of electives he or she may change to an advisor with particular expertise in that area. In this way the student may gain additional insight and perhaps even learn about job opportunities in the chosen concentration.

Current undergraduate advisors in the Department of Forestry and Environmental Resources, together with office and telephone numbers and areas of expertise, are listed in Chapter 2 and also available on the online directory.

The major duties of the advisor are related to the academic program. It is the ADVISOR'S DUTY to make sure that students are aware of the Department's academic requirements. In addition it is the advisor's responsibility to provide sufficient information and adequate guidance so that the student can make intelligent decisions about his or her program. THE FINAL RESPONSIBILITY, HOWEVER, FOR MOST DECISIONS REGARDING REGISTRATION AND COMPLETION OF DEGREE REQUIREMENTS IS THE STUDENT'S. Decisions regarding the program should be made in private meetings between the advisor and student. Such meetings between each student and his or her advisor are mandatory during preregistration periods. The student's personal identification number (P.I.N.) required for registration is issued by the advisor only.

During the Summer orientation period, an opportunity will be provided for each student and advisor to meet, become acquainted, answer questions, and let the advisor explain his responsibilities.
C. Honors Program

The Honors Program provides special challenges and recognition for students with excellent academic records.

Admission: The minimum admission requirement is an overall GPA of 3.0 and 3.25 in major after at least 40 credit hours at NCSU or as transfer from another institution. See details at this web site:

http://www.ncsu.edu/honors/

Coursework: A minimum of 9 credit hours as required:

1) Three (3) credit hours of 200-level or higher honors courses, or graduate level courses that are electives, or other courses designated as appropriate by the college or department.
2) Two (2) credit hours of CNR 490 Senior Honors Seminar. This will be offered in the Spring Semester each year. In the latter part of the seminar, students will be required to give an oral presentation of their senior honors independent study.
3) Four (4) credit hours of senior honors independent study that includes a written thesis, paper, or laboratory report that is guided by a CNR faculty member. The student and his/her advisor will decide whether the independent study will be for a grade or for credit only.

Interested students should contact Dr. Kirkman or Dr. Blank.

D. Personal Standards of Professionalism and Behavior

Because forestry and natural resources are professions requiring the highest degree of dedication and professionalism in their practitioners, the faculty of the Department of Forestry and Environmental Resources expect that all students enrolled in its programs will behave at all times so as to reflect favorably on themselves, their University and their profession. Conformity to this high standard of personal and professional behavior is extremely important to the student when seeking a job, as many employers rank personal traits as highly as professional skills and technical knowledge when evaluating students as potential employees. Any student who violates the Department's standards of personal and professional behavior is subject to appropriate action by the faculty and/or department head. The student Honor Code and Student Judicial System are listed on the Web at:

http://policies.ncsu.edu/regulation/reg-11-35-01

Students are expected to abide by, and support the Student Honor Code.
E. E-Mail List for Undergraduates

The Department has set up an e-mail list serv for undergraduate students. There is a separate list for each class; i.e., fer_freshmen@lists.ncsu.edu, fer_sophomores@lists.ncsu.edu, fer_juniors@lists.ncsu.edu, fer_seniors@lists.ncsu.edu. You should monitor your email frequently as messages may be posted which might be of importance to you. You are also subscribed to a curriculum list serv, depending on your major; i.e. fomstudents@lists.ncsu.edu, nrstudents@lists.ncsu.edu, etstudents@lists.ncsu.edu, and sfwstudents@lists.ncsu.edu. The mailing lists are for official department use only, including academic and research purposes. Personal and commercial uses are not allowed on the listserv. Users are expected to conduct themselves professionally and with courtesy to other users. If you are not receiving departmental information emails, please contact Sydna Willis in 3136H Jordan Hall, 515-7560 or sydna_willis@ncsu.edu

F. Use of Tobacco Products

Biltmore Hall, Robertson Wing, Hodges Lab, Jordan Hall and Jordan Annex are smoke free buildings. Use of all tobacco products is prohibited.

G. Grading and Attendance

Departmental requirements for grading and attendance in class are no different from those of the University generally. The grading system is described in the Undergraduate Catalog and on the Web. How grades are determined in each course will be explained in writing by the instructor at the beginning of the course.

Attendance policies are repeated here for emphasis:

NOTE: Unless otherwise stated by the instructor, regular attendance at classes, laboratory periods and examinations is expected of all students.

1. Excuses for anticipated or emergency absences shall be accepted at the discretion of the instructor. When an excuse is accepted, an opportunity shall be provided for making up any work missed. When an excuse is not accepted, there is no obligation to provide an opportunity for makeup work.

   a) Excuses for anticipated absences must be cleared with the instructor before the absence.

      Examples of anticipated absences are:

      i) University duties or university trips as certified by an appropriate member of the faculty or staff
      ii) Required court attendance as certified by the Clerk of Court.
      iii) Religious observations as certified by the Dept. of Student Development
      iv) Required military duty as certified by the student’s commanding officer
b) Excuses for emergency absences must be reported to the instructor as soon as possible but not more than one week after the return to class.

Examples of emergency absences:

i) Illness or injury when certified by an attending physician.
ii) Death or serious illness in the family when certified appropriately.

**NOTE:** Physicians on the Student Health Service staff do not provide written excuses. An instructor may call Clark Hall Infirmary to verify that a student was seen on a given date. The counseling Center does not provide written excuses except in cases of crises. An attempt to verify deaths or serious illness will be made by Student Development at the request of the instructor.

2. Each instructor at the beginning of the semester shall explain how that attendance policy is to be implemented in each class. Procedures for submitting excuses and for scheduling makeup work when the excuses are accepted should be clearly defined.

3. Students who discontinue class attendance without officially dropping the course or withdrawing from the University will receive an F grade.

4. Instructors will counsel directly with students whose absences are adversely affecting their performance.

5. University policy requires that a record of attendance be kept in all 100 and 200 level courses and provides for penalties assessed against grades for poor class attendance. Each instructor's policy will be clearly defined in the course syllabus. When it becomes apparent that excessive absenteeism is contributing to poor performance in a course, the instructor will refer the student to his/her advisor and to the Department Head for counseling.

**H. Academic Advancement**

All students should be thoroughly familiar with the Academic Warning, Academic Suspension and First-Year Course Repeat policy. They are designed to ensure adequate progress in a degree program. **STUDENTS ARE CAUTIONED TO BECOME VERY FAMILIAR WITH THE UNIVERSITY STEP-WISE GRADE POINT AVERAGE ACADEMIC SUSPENSION POLICY.** It can be very difficult for a student whose GPA is near the minimum for good academic standing with a high number of credit hours to achieve the substantial improvement in academic performance needed to remain in good standing. New transfer students in particular should be aware that the credit hour steps include the total of credit hours attempted at NCSU plus those transferred.

**First Year Course Repeat Policy**

The first-year course repeat policy is a policy of forgiveness that helps new NCSU undergraduate students maintain good academic standing. The policy is necessary because new students lack familiarity with the University, and as a result, they are more likely to make errors in their choice of courses and total course load.
The policy allows each new student to retake up to 8 credits of 100/200 level courses with D or F grades and have the first grade removed from computation of the GPA. It is in your best interest to use this policy if needed. The full policy statement is included below for emphasis.

Course Repeat Policy Effects

1. The eligible student who repeats a course while electing that the first-year course repeat policy apply will have the grade points and the credit hours attempted and earned on the first completion of the course removed from the calculation of the cumulative grade point average and from the calculation of the total hours attempted regardless of the grade earned on the second attempt. The modification of the cumulative grade point average which will result from the removal of the grade points and credit hours attempted and earned on the first completion of the course will be calculated and recorded on the student’s record after the second completion of the course.

2. The course title and grade for the first completion will be shown on the official record with a code (R) to indicate that it was repeated and that the first grade was removed from the computation of the cumulative grade point average.

3. The recorded grade point average of the student for the semester in which the course was originally taken will not be changed.

4. Repeating a course and exercising the first-year course repeat policy does not retroactively change the status of the student as to semester academic honors, academic warning, probation, or suspension in prior semesters.

5. Many graduate and professional schools re-compute grade point averages in the process of considering an applicant for admission to such programs. This re-computation of grade point averages may include restoring the cumulative grade point average effects of initial attempts at courses repeated under this policy.

Eligibility

1. the initial attempt and the repeat under this policy must be a NCSU course;
2. the course being repeated was completed for the first time after the Summer Session II 1995;
3. the course being repeated must be at the 100- or 200-level;
4. the student received a grade below C- in the course that is repeated;
5. both attempts of the course were for letter grades; no unsuccessful audits or credit-only attempts may be repeated nor may repeats under the policy be made for audit or credit-only;
6. the student has not received credit for an advanced course dealing with the same subject matter as the course being repeated; and,
7. the first attempt of the course must have occurred within 12 months of the student’s initial enrollment in any classification at NCSU; this period is not lengthened by voluntary or involuntary failure to enroll in subsequent semesters or summer sessions, nor by enrolling at
less than a minimum full-time load following the initial date of enrollment;

8. the second attempts is for the same course or for an approved substitute course (see “Listing of Approved Substitute Courses for the First Year Course Repeat Policy”);

9. the second attempt occurs in a regular semester or summer session which ends within 12 months of the completion of the first attempt of the course; if the course is not available during that period or if the student is not enrolled when it is available, then the second attempt must occur in the next regular semester during which the student is enrolled at NCSU and the course is available;

10. the total number of courses repeated by the student under this policy will not exceed two (2) courses nor will the total of hours of such courses exceed eight (8) hours, nor will the total number of courses repeated under this policy combined with those repeated under the Course Repeat Without Penalty Policy exceed three (3) courses, nor will the total hours of such courses exceed twelve (12) hours;

11. the Notice of Exercise of First Year Course Repeat Policy is filed by the student with the Department of Registration and Records on or before the “last day to drop a course without a grade for courses at the 400 level and below” of the semester or summer session in which the course is repeated.

Procedures

1. Students are advised to consult with their academic advisors in making the decision to elect a course repeat under this policy.

2. The student must submit a Notice of Exercise of First Year Course Repeat Policy to the Department of Registration and Records on or before the last day to drop a course without a grade at the 400 level or below of the semester or summer session in which the course is repeated. Forms may be obtained from faculty advisors, departmental coordinators of advising, associate deans for academic programs, and the Department of Registration and Records.

Warning Regarding Timing of Filing Necessary Forms

This policy requires the election of the repeat under the policy be made early in the semester during which the repeat of the course is being attempted. Thus, requests to either apply the course repeat policy to a course repeated in a prior semester, or to reverse a prior application of the repeat policy are inconsistent with the policy.

Expected Duration of This Policy

The First-Year Course Repeat Policy has been indefinitely extended unless specific academic policy revisions occur to the contrary. However, eligible courses taken the first year at NCSU may be repeated under this policy within 12 months of the end of the term in which first attempted with provisions consistent with Eligibility Item 9 above.

The First-Year Course Repeat Policy listed on the web at:

http://www.ncsu.edu/uap/resources/courserp/forgive/fycr/oldreg.htm
### Listing of Approved Substitute Courses for the Course Repeat Without Penalty and the First Year Repeat Policies

<table>
<thead>
<tr>
<th>1st Completion of:</th>
<th>May be repeated with:</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARE 201</td>
<td>EC 201</td>
</tr>
<tr>
<td>BIO 125</td>
<td>BIO 105</td>
</tr>
<tr>
<td>BIO 105</td>
<td>BIO 125</td>
</tr>
<tr>
<td>CE 213</td>
<td>CE 214</td>
</tr>
<tr>
<td>CE 214</td>
<td>CE 213</td>
</tr>
<tr>
<td>CE 215</td>
<td>MAE 208</td>
</tr>
<tr>
<td>CH 111</td>
<td>CH 101</td>
</tr>
<tr>
<td>CH 220</td>
<td>CH 221</td>
</tr>
<tr>
<td>CSE 101</td>
<td>CSC 110</td>
</tr>
<tr>
<td>CSC 102</td>
<td>CSC 210</td>
</tr>
<tr>
<td>CSC 110</td>
<td>CSC 112</td>
</tr>
<tr>
<td>CSC 110</td>
<td>CSC 114</td>
</tr>
<tr>
<td>CSC 111</td>
<td>CSC 112</td>
</tr>
<tr>
<td>CSC 112</td>
<td>CSC 110</td>
</tr>
<tr>
<td>CSC 112</td>
<td>CSC 114</td>
</tr>
<tr>
<td>CSC 114</td>
<td>CSC 116</td>
</tr>
<tr>
<td>CSC 116</td>
<td>CSC 112 or ECE 109</td>
</tr>
<tr>
<td>CSC 216</td>
<td>ECE 209</td>
</tr>
<tr>
<td>EC 201</td>
<td>ARE 201</td>
</tr>
<tr>
<td>EC 201</td>
<td>EC 205</td>
</tr>
<tr>
<td>EC 205</td>
<td>EC 201</td>
</tr>
<tr>
<td>ECE 206</td>
<td>ECE 109</td>
</tr>
<tr>
<td>ENG 100</td>
<td>FLE 100</td>
</tr>
<tr>
<td>ENG 101</td>
<td>FLE 101</td>
</tr>
<tr>
<td>FOR 252</td>
<td>FOR 110</td>
</tr>
<tr>
<td>MA 107</td>
<td>MA 111</td>
</tr>
<tr>
<td>MA 108</td>
<td>MA 111</td>
</tr>
<tr>
<td>MA 111</td>
<td>MA 107 or MA 108</td>
</tr>
<tr>
<td>MA 121</td>
<td>MA 131</td>
</tr>
<tr>
<td>MA 121</td>
<td>MA 141</td>
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<tr>
<td>MA 131</td>
<td>MA 121</td>
</tr>
<tr>
<td>MA 131</td>
<td>MA 141</td>
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<td>MA 141</td>
<td>MA 131</td>
</tr>
<tr>
<td>MA 141</td>
<td>MA 121</td>
</tr>
<tr>
<td>MA 241</td>
<td>MA 231</td>
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<td>MA 231</td>
<td>MA 241</td>
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<tr>
<td>MAE 206</td>
<td>CE 214</td>
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<tr>
<td>MEA 208</td>
<td>CE 214</td>
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<tr>
<td>PY 131</td>
<td>PY 205</td>
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<td>PY 131</td>
<td>PY 211</td>
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<td>PY 201</td>
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<td>PY 202</td>
<td>PY 208</td>
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<td>PY 208</td>
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<td>PY 221</td>
<td>PY 211</td>
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<td>T 105</td>
<td>T 200</td>
</tr>
<tr>
<td>T 200</td>
<td>T 105</td>
</tr>
</tbody>
</table>
I. University Graduation Requirements

1. The student is responsible for completing all the course requirements for graduation in his / her program **prior to applying for graduation.**

2. Undergraduate residence requirement for all students:

   To be eligible for a bachelor's degree, a student must be enrolled in a degree program and must have earned at least 30 of his/her last 45 hours of credit through NCSU courses. Individual departments and/or colleges may have additional residence requirements.

3. Overall grade point average of 2.0 on all courses

4. See curriculum footnotes for additional graduation requirements specific to each curriculum.

J. Computers

The Department requires that all students graduating from the undergraduate program be competent in the use of computers.

To assist the student toward meeting this goal the College of Natural Resources maintains two computer labs; one in room 3032 Biltmore, one in 5103 Jordan Hall and one in 3214 Jordan Addition. The Biltmore lab is available for use seven days a week to provide the student with the facilities necessary to develop and expand computing skills. Because of the intensive use of the computer lab, students who may wish to do so are encouraged to consider purchasing a personal computer. The university bookstore sells computers at significant discounts off retail prices. It is suggested that students discuss computer needs with Dr. Blank (515-7566) prior to making purchases.

Students interested in buying a computer have several options to follow. The following list summarizes options from the minimum to the best. Used computers can also be a good deal, but make sure they are at least 50% less expensive than a comparable new computer.

<table>
<thead>
<tr>
<th>Component</th>
<th>PC Desktop/Laptop</th>
<th>Apple Desktop/Laptop</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2013-2014 Minimum Recommendations for New Computers</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CPU</td>
<td>Intel Core 2 Duo or AMD X2 Dual Core</td>
<td>Intel Core 2 Duo</td>
</tr>
<tr>
<td>System Ram</td>
<td>4 GB</td>
<td>4 GB</td>
</tr>
<tr>
<td>Optical Drive</td>
<td>DVD/RW</td>
<td>DVD/RW</td>
</tr>
<tr>
<td>Hard Drive</td>
<td>320 GB</td>
<td>128 GB</td>
</tr>
<tr>
<td>Operating System</td>
<td>Windows 7 Professional 64 bit</td>
<td>OS X v.10.7</td>
</tr>
<tr>
<td>Ethernet Adaptor</td>
<td>Built in</td>
<td>Built in</td>
</tr>
<tr>
<td>Energy Efficiency</td>
<td>EPEAT Silver or Gold</td>
<td>EPEAT Silver or Gold</td>
</tr>
<tr>
<td>-------------------</td>
<td>----------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>Warranty Service</td>
<td>3-year on-site parts &amp; labor</td>
<td>3-year AppleCare Protection Plan</td>
</tr>
<tr>
<td>External Hard Drive</td>
<td>500 GB</td>
<td>250 GB</td>
</tr>
</tbody>
</table>

### 2013-2014 Minimum Recommendations for Computer You Already Own

<table>
<thead>
<tr>
<th>Component</th>
<th>Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU</td>
<td>Intel Core 2 Duo, 1 Ghz, or AMD X2 Dual Core</td>
</tr>
<tr>
<td>System RAM</td>
<td>2 GB</td>
</tr>
<tr>
<td>Optical Drive</td>
<td>DVD/RW</td>
</tr>
<tr>
<td>Hard Drive</td>
<td>160 GB</td>
</tr>
<tr>
<td>Operating System</td>
<td>PC: Windows 7 Professional Apple: OS X v.10.6</td>
</tr>
<tr>
<td>Ethernet Adapter</td>
<td>Yes</td>
</tr>
<tr>
<td>Wireless Card</td>
<td>Yes</td>
</tr>
<tr>
<td>Warranty</td>
<td>1 year remaining</td>
</tr>
<tr>
<td>Antivirus Software</td>
<td>Free from NC State</td>
</tr>
<tr>
<td>External Hard Drive</td>
<td>160 GB</td>
</tr>
<tr>
<td>Cable Lock</td>
<td>Combination cable lock</td>
</tr>
</tbody>
</table>

All other information and specifications regarding your personal computer requirements can be found at: [http://oit.ncsu.edu/computer-specs/new-computer](http://oit.ncsu.edu/computer-specs/new-computer)

### K. Computer Lab

The College of Natural Resources has one of the most modern instructional computer labs on the NCSU campus. Located on the third floor of Biltmore Hall (Room 3032) and third floor of Jordan Addition (Room 3214), these facilities are fully networked to the LAN (local area network) and interfaces with campus network system and all Internet resources. Since all PC’s and workstations are connected to the Internet, students have easy access to web browsers (Netscape, etc.) and to their e-mail accounts.

### L. English Communications

The Department also requires that each graduate be competent in English communication. This objective is achieved by requiring grades of C or better in ENG 101 and by stressing communication skills in all forestry and natural resources courses. Papers and exams are graded by the instructor for adequacy of expression and quality of grammar and spelling as well as for their technical content. In cases where instructors detect communication deficiencies that impair a student’s professional development, appropriate remedial steps should be taken, including referral to the English Department.
M. Use of Equipment and Issuance of Keys

In the course of their laboratory and summer camp work, students use large amounts of equipment purchased with public tax funds. Students are responsible for the careful use of equipment and for the return of all items. Appropriate charges are made for lost and/or broken equipment. Failure to pay such charges will result in the withholding of grades and/or diploma. Similar penalties will be applied for failure to return keys to College facilities charged out to individuals.

N. Tutorial Services

Academic support services including individual tutors, review sessions, and group tutoring are available for a wide variety of courses. For assistance with most basic 100 and 200 level courses, contact the appropriate university or department support service listed below. Free tutoring assistance is provided by the College of Natural Resources for FOR, ETM, SFW or NR courses or for other 300 and 400 level courses for which tutoring services are not available. For more information, contact Ms. Sarah Pickel, Academic Dean’s office, 2018 Biltmore Hall, phone 515-6191.

In addition, a number of other University units provide tutorial assistance for students; these units are listed on the web at: http://www.ncsu.edu/tutorial_center

O. 25% Tuition Surcharge

All undergraduate students since the Fall of 1995 semester and thereafter are subject to a 25% tuition surcharge for all credit hours attempted in excess of 140 or 110% of the student’s academic program, whichever is greater.

Credit hours to be counted:

- All regular session degree-creditable hours attempted at NCSU; including failed courses, course-repeat-without-penalty courses, and courses dropped with a “W” grade.
- All transfer credit accepted by NCSU, which is used to satisfy degree requirements, as defined by the student’s Automated Degree Audit.

Credit hours to be excluded:

- NCSU summer session courses (Summer Camp)
- Advanced placement credit through AP, CLEP, or credit by examination
- NCSU off-campus extension courses
- ROTC credits earned in reserve officer training courses (AS, MS, NS)
- Summer session and off-campus extension transfer credit from all UNC system institutions.
Students subject to surcharge:

- Students earning a first baccalaureate degree in a program that requires no more than 128 credit hours will be subject to the surcharge after having completed eight or more regular semesters at any institution. Students enrolled in the cooperative extension program are registered for zero hours, which will not add to the semesters enrolled. Work completed in summer sessions or off-campus extension will not count towards the eight semesters.

For students earning a first baccalaureate degree in a program that requires no more than 128 credit hours, the surcharge shall be applied to all counted credit hours in excess of 140. The surcharge will be applied only to those hours in excess of 140.

Programs considered to be in excess of 128 credit hours will be limited to the following:

- Students in the Bachelor of Landscape Architecture (BLA) are required to complete 157 hours. They will be subject to the surcharge after having completed 10 semesters for all counted credit hours in excess of 173.

- Students pursuing multiple degrees and minors will be subject to the surcharge for all counted credit hours in excess of 140 or 110% of that required for the degree(s), whichever is greater. Hours required for the degree(s) are defined as the number of hours required for the primary degree plus all hours completed that are creditable towards the minor(s) or additional degree(s) but are non-degree-creditable towards the primary degree, as defined by the student’s Automated Degree Audit. Students pursuing programs requiring more than 128 hours will be subject to the surcharge only after having completed 10 full-time semesters.

- Students pursuing a baccalaureate degree other than their first will be subject to the surcharge or all counted credit hours in excess of 140 or 110% of that required for the additional degree as defined by the student’s Automated Degree Audit, whichever is greater. Students pursuing a baccalaureate degree other than their first will be subject to the surcharge only after having completed 2 semesters subsequent to the previous baccalaureate degree.

P. Counseling

The Counseling Center counsels NC State students experiencing personal, academic or vocational problems. We also offer psychological assessment and psychiatric consultation. Our services are primarily short-term in nature, and we ensure strict confidentiality. We make referrals to other helping professionals and community agencies as appropriate. Many services are free to currently enrolled students of North Carolina State University.

How to Make a Counseling Appointment:

- To schedule your first appointment, please call 919-515-2423 or come to the Counseling Center in person.
- For counseling emergencies during office hours, please come to the Counseling Center.
Walk-in Appointments are available from 9:00 a.m. to 4:00 p.m. weekdays except 11:00 am – 4:00 p.m. on Wednesdays or call 919-515-2423 for more information.

- For after-hours emergencies, please call 919-515-3000 and ask to speak to the counselor on call.
- For appointments after your first, you may schedule by calling 919-515-2423.

The Counseling Center is located in the Student Health Center, Health Center, 2815 Cates Avenue.

**Q. Collection of Student Course Work for Use in Program Assessment**

The faculty-approved Department of Forestry and Environmental Resources Program Assessment Plans call for samples of student written work to be collected to assess undergraduate program performance. While the Department has not yet initiated portfolio assessment, our assessment plan states that portfolios of student work will be collected and reviewed at five-year intervals. Logistics of that component in the program assessment plan remain to be determined, but individual assignments and examples of work across the curriculum spread may be gathered to evaluate performance concerning any of the learning outcomes articulated for the several curricula in the Department.

All student-generated materials collected from professors will be used anonymously, with individual students' names removed. All materials will be reviewed in cohorts to provide generalized evidence of degrees of achievement of program goals. Thus, individual students' work will not be isolated for use as examples; nor will sample review results be traceable to specific individuals. All results will be aggregated whenever reported, and materials will be disposed of in appropriate manner after their usefulness is past.

Further questions about program assessment may be directed to Dr. Gary Blank, in the Department of Forestry and Environmental Resources.
CH. 6 SCHOLARSHIPS

Operating independently from the University Merit Awards Program, the Department of Forestry and Environmental Resources Scholarship Committee annually awards 4 types of scholarships: Academic, Forestry Summer Camp, Industrial, and Work-Study. Funds for these awards come from alumni donations, the Forestry Foundation, and timber sale receipts from the school’s forests. About 50 Academic Scholarships ranging between $3,000 and $5,000 each are awarded annually. Academic Scholarships are awarded from applicants with outstanding academic achievement in high school or college. A total grade point average of at least 3.3 is typically required, and academic scholarships are renewable, provided that superior progress is made towards a degree offered by the Department of Forestry. The following endowed Academic Scholarships are available: John M. and Sally Blalock Beard Academic Scholarship; Class of 1960 Endowed Scholarship; Felton F. Coley Scholarship; Edwin F. Conger Academic Scholarship; James L. Goodwin Academic Scholarship; T.G. Harris/J.P. Harper/Chesapeake Corporation Academic Scholarship; Hofmann Forest Academic Scholarship; G. Eddie Jackson Memorial Scholarship; Joseph J. Jarvis Endowed Scholarship; Larry G. & Elsie C. Jervis Academic Scholarship; R.B. & Irene Jordan Endowed Scholarship; William R. Poole Scholarship of Distinction; Stanford Adams-NC SAF Scholarship; William J. Barton and Alexander Calder, Jr. Industrial Forestry Scholarship; Robert and Regan Brown Scholarship; Camp Younts Foundation Fisheries and Wildlife Sciences Scholarship; Crescent Resources/Duke Energy Scholarship in Sustainable Forestry; Robert E. Dorward Memorial Scholarship; Dr. Donald and Jean Steenson Scholarship; George R. Slocum Endowed; and Jonathan Wainhouse Memorial Scholarship.

About eight scholarships that range from $500 to $800 are available to students attending Forestry Summer Camp. The Maki-Gemmer-Johnson and the Victor W. Herlevich scholarships provide 2 awards are awarded annually to applicants attending the next Forestry Summer Camp. The Ralph C. Bryant Scholarship is awarded after summer camp to the students who exhibited superior academic and professional skills, while at camp.

The Scholarship Committee also awards Work-Study Scholarships, generally to Juniors and Seniors in Forest Management. Work-Study Scholarships, currently at $4,032 each, carry a work requirement, generally satisfied on one of the college forests, and thus some forestry skill is generally required of recipients. The following Work-Study Scholarship is available - the James L. Goodwin Work Scholarship.

Forest Management (FOM); Natural Resources (NRE and NRP); Fisheries, Wildlife & Conservation Biology(SFW) and Environmental Technology & Management (ETM) students may apply for forestry scholarships by submitting an application, obtained from Dr. Richard R. Braham, Forestry Scholarship Committee Chairman, 3003 Biltmore Hall or from Sydna Willis in Room 3136H Jordan Hall. Applications are accepted at any time, but the Committee selects the next academic year’s scholarship recipients in May/June of each year.

Extracurricular activities of all sorts on the NCSU campus provide opportunities for personal and professional volunteer and service activities, and social events. Undergraduate organizations in the department provide a focal point for students to participate in extracurricular activities associated with their chosen curriculum and profession. All students are encouraged to support the undergraduate organizations of the Department of Forestry and Environmental Resources. Any student interested in an organization may contact the faculty advisor for more information.

For the full online list on on-campus and professional organizations related to our majors, please visit http://cnr.ncsu.edu/fer/student_experience/organizations.php. Search all student organizations at http://www.ncsu.edu/campus-life/student-organizations/.

The following are summaries of some of the organizations our students commonly join.

**CNR Ambassadors**

CNR Ambassadors are a group of students who serve as liaisons between CNR and the outside community including prospective students, parents, distinguished guests, and alumni. Their majors cover a wide span of curricula within CNR, and their interests and extracurricular activities are equally diverse. They have a strong commitment to scholarly achievement that fosters academic excellence, maturation and inclusion of all students. Staff Advisor – Tiffany McLean, 2018 Biltmore Hall, 919-515-5510

**CNR Council**

The CNR Council serves as the unified voice of all students in the College of Natural Resources. The group is composed of representatives from all recognized student organizations in the college. The Council meets monthly to discuss current issues, problems, achievements and concerns, as well as to develop ideas for better serving students. It is responsible for allocating funds each year to CNR organizations to provide support for various activities. It also publishes the college publication, The Pinetum.

Faculty Advisor - Dr. Adrianna Kirkman, 2018 Biltmore Hall, 919-513-7616

**Leopold Wildlife Club**

The Leopold Wildlife Club is the NCSU student arm of the The Wildlife Society national organization. This club provides opportunities for professional development, networking, and social events for students looking for careers in the wildlife field. Meetings are held twice a month. The meetings generally feature a speaker from some aspect of the wildlife field. Previous speakers have included wildlife biologists, rehabilitators, wildlife veterinarians, and more. The club strives to have at least one field outing or workshop every month, and attend the National Conference each year. NC State hosted the 2013 Southeastern Wildlife Conclave.

Faculty advisor - Dr. Chris Moorman
Minorities in Agriculture, Natural Resources and Related Sciences

Minorities in Agriculture, Natural Resources and Related Sciences (MANRRS) was chartered in 1998, and is jointly sponsored by the College of Natural Resources and the College of Agriculture and Life Sciences. The three main objectives are to provide students with professional development, community development, and personal development opportunities, but overall, to strive for the inclusion, achievement, and advancement of all people in the agricultural sciences. They conduct a wide range of activities including, but not limited to, community service, collaborating with fellow student organizations, and holding fund-raising events such as the biannual Fish Fry and the Muscadine Jelly Sale.

Faculty Advisor - Thomas Easley, Director of the CNR Community for Diversity

NC State Forestry Club

The NC State Forest Club competes in timbersports, which involve events such as underhand chop, sawing, chainsaw, axe throw, knife throw, pole climb and archery, to name a few, as well as technical events such as plant and wildlife ID, air photo interpretation, and timber estimation. The club competes in at least three regional competitions throughout the year, leading up to the Southeastern Forestry Conclave, in which students from 15 colleges compete. NC State hosted the 2012 Southeastern Conclave. The Forestry Club is open to any major. The objectives of the Forestry Club are to:

- provide a forum for professional development of forestry and natural resources students,
- represent the College of Natural Resources in college and university activities,
- sponsor activities and competition, and,
- serve the public through volunteer community service projects.

Faculty advisor - Dr. Joe Roise

NCSU Student American Fisheries Society

Student Fisheries Society is a sub-unit of the North Carolina Chapter of the American Fisheries Society. It encourages the exchange of fisheries and aquatic science information among students, faculty and regional professionals and provides career guidance to students.

Faculty Advisor - Dr. Joe Hightower in the Department of Biology, CALS

NCSU Student Chapter - International Society of Tropical Foresters

The NCSU Student Chapter of International Society of Tropical Foresters (ISTF) acts in concert with the Office for International Programs of the College of Natural Resources to enhance the international perspective of forestry studies at NC State. ISTF meets regularly to hear guest speakers and presentations focusing on some issue in the international arena. Topics include current research in the tropics in which students and faculty are involved. ISTF also organizes annual events such as conference attendance, special guest speakers, and a spring symposium. Membership is open to any person with an interest in international forestry and environmental issues.

Faculty advisor - Dr. Erin Sills
NCSU Student Chapter - Society of American Foresters

The NCSU Student Chapter of the Society of American Foresters is associated with the professional Society of American Foresters organization. Members participate in many activities throughout the year, including community service projects, guest speakers, career development, and hosting a Mentors Dinner. The Student Chapter of SAF has strong affiliations with the Triangle Chapter, the North Carolina Division, and the Appalachian Section (NC, SC, & VA) of SAF and the department helps support attendance of student delegates at the annual regional and national conferences. Traditionally, many of the SAF Student Chapter members participate in a Wilderness Management Leadership Fieldtrip prior to the national convention, which is led by Dr. Roise.

Faculty advisor - Dr. Joe Roise

Roots and Shoots

Roots and Shoots is a conservation club to raise awareness and promote animal conservation both locally and globally. We're about making positive change happen - for our people, for animals, and for the environment. The Roots & Shoots network connects students who share a desire to create a better world. We identify problems in global and local issues related to conservation and take action. Through service projects, student campaigns and awareness outreach, Roots & Shoots members make an impact in their community and globally.

Faculty Adviser - Dr. Werner Dorgeloh, wgdorgel@ncsu.edu, 919-303-1664

Xi Sigma Pi

Xi Sigma Pi is the National Forestry Honor Society, whose goal is to recognize and promote academic excellence in forestry education. Currently 42 universities have chapters. Mu Chapter at the Department of Forestry at NCSU is the only chapter in North Carolina, and one of only nine chapters in the South. The chapter at NCSU ranks among the oldest in the United States, since in 1940 it was the eleventh school to be granted a charter, and since it was the first school in the South. Membership is by invitation, and it is limited to academically gifted juniors, seniors, graduate students, and faculty.

Faculty advisor - Dr. Richard Braham

Check out the many ways you can enhance your learning and professional development at http://cnr.ncsu.edu/fer/student_experience/.