Environmental Technology and Management (BS)

Environmental Technology and Management offers a comprehensive teaching and research program, preparing students for careers within the arenas of environmental regulation, environmental site assessment, and environmental health and safety. This curriculum prepares graduates to collect data, analyze and interpret those data, and determine appropriate solutions for sound environmental management. The curriculum focuses on the sciences behind the biological and chemical mechanisms of environmental processes. Students learn how to deal with a range of topics from everyday environmental management activities to natural and man-made disasters such as chemical spills, fires, hurricanes, oil spills, and more. Many Environmental Technology courses emphasize hands-on training with state-of-the-art monitoring equipment. An internship to obtain actual working-world experience is required.

Contact

For information on entrance requirements, contact the program director:

Dr. Angela Allen
Department of Forestry and Environmental Resources
Room 2231 Jordan Hall Addition
Campus Box 8008
Raleigh, NC 27695-8008
919.515.7581
amallen2@ncsu.edu

Plan Requirements

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Ecology Elective (p. 2) | 4

Required Courses

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K. Philips
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1 A grade of C- or better required.
2 Students should consult their academic advisors to determine which courses fill this requirement.

### Ecology Electives

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TOX 201 Poisons, People and the Environment 3
TOX 401 Principles of Toxicology 4
TOX 415 Ecotoxicology 4
TOX 501 Principles of Toxicology 4

### Semester Sequence

This is a sample.

**Critical Path Courses** – Identify using the code (CP) which courses are considered critical path courses which represent specific major requirements that are predictive of student success in a given program/plan. Place the (CP) next to the credit hours for the course.

#### First Year

**Fall Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENV 100 &amp; ENV 101</td>
<td>Student Success in Environmental First Year and Exploring the Environment</td>
<td>3</td>
</tr>
<tr>
<td>ENG 101</td>
<td>Academic Writing and Research</td>
<td>4</td>
</tr>
<tr>
<td>MA 131 or MA 141</td>
<td>Calculus for Life and Management Sciences A (CP) or Calculus I</td>
<td>3-4</td>
</tr>
<tr>
<td>BIO 181</td>
<td>Introductory Biology: Ecology, Evolution, and Biodiversity (CP)</td>
<td>4</td>
</tr>
<tr>
<td>GEP Health and Exercise Studies (<a href="http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-health-exercise-studies/">http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-health-exercise-studies/</a>)</td>
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**Spring Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>PY 131</td>
<td>Conceptual Physics</td>
<td>4</td>
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<tr>
<td>ET 105</td>
<td>Introduction to Environmental Regulations</td>
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<tr>
<td>GEP Humanities (<a href="http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-humanities/">http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-humanities/</a>)</td>
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<tr>
<td>IP Elective (p. )</td>
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<tr>
<td>GEP Health and Exercise Studies (<a href="http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-health-exercise-studies/">http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-health-exercise-studies/</a>)</td>
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#### Second Year

**Fall Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>ST 311</td>
<td>Introduction to Statistics</td>
<td>3</td>
</tr>
<tr>
<td>CH 101</td>
<td>Chemistry - A Molecular Science &amp; 102 GENERA CHEMISTRY LABORATORY</td>
<td>4</td>
</tr>
<tr>
<td>Environmental Technology Lab Electives (p. 2)</td>
<td></td>
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</tr>
<tr>
<td>Ecology Elective (CP) (p. 2)</td>
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**Spring Semester**

<table>
<thead>
<tr>
<th>Course</th>
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<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ST 312 or MA 231</td>
<td>Introduction to Statistics II or Calculus for Life and Management Sciences B</td>
<td>3</td>
</tr>
<tr>
<td>NR 301</td>
<td>Practicum for Professional Development I</td>
<td>1</td>
</tr>
<tr>
<td>SSC 200 &amp; SSC 201 SOIL SCIENCE LABORATORY (CP)</td>
<td>Soil Science</td>
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<tr>
<td>CH 201 or CH 202 QUANTITA</td>
<td>Chemistry - A Quantitative Science or NR 300 NATURAL</td>
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<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>ET 330</td>
<td>Environmental Technology Practicum</td>
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#### Third Year

**Fall Semester**

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<tr>
<th>Course</th>
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<th>Hours</th>
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<tbody>
<tr>
<td>CH 220 &amp; CH 222 ORGANIC CHEMISTRY I LAB</td>
<td>Introductory Organic Chemistry</td>
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<tr>
<td>Environmental Technology Lab Electives (p. 2)</td>
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<tr>
<td>Spatial Technology Elective (p. 1)</td>
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<tr>
<td>Advised Elective (p. 3)</td>
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<tr>
<td>GEP US Diversity, Equity, and Inclusion (<a href="http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-usdei/">http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-usdei/</a>)</td>
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</tr>
<tr>
<td>GEP Humanities (<a href="http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-humanities/">http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-humanities/</a>)</td>
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**Spring Semester**

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<thead>
<tr>
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<tbody>
<tr>
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<td></td>
<td>1</td>
</tr>
<tr>
<td>Environmental Technology Lab Electives (p. 2)</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>ET 310</td>
<td>Environmental Monitoring and Analysis (CP)</td>
<td>3</td>
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<tr>
<td>ET/MEA 320</td>
<td>Fundamentals of Air Pollution</td>
<td>3</td>
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<tr>
<td>Advised Elective (p. 3)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>CH 223 &amp; CH 224 ORGANIC CHEMISTRY II LAB</td>
<td>Organic Chemistry II</td>
<td>4</td>
</tr>
<tr>
<td>or TOX 415 ENVIRONMENTAL TOXICOLOGY AND CHEMISTRY</td>
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#### Fourth Year

**Fall Semester**

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>Environmental Technology Lab Elective (p. 2)</td>
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<td>1</td>
</tr>
<tr>
<td>ET 455</td>
<td>Adaptive Management and Governance</td>
<td>3</td>
</tr>
<tr>
<td>NR 484</td>
<td>Environmental Impact Assessment</td>
<td>4</td>
</tr>
<tr>
<td>or NR 420</td>
<td>or Watershed and Wetlands Hydrology</td>
<td></td>
</tr>
</tbody>
</table>
Advised Elective (p. 3) 3

Spring Semester
Capstone Elective (p. 3) 3
GEP Interdisciplinary Perspectives (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-interdisciplinary-perspectives/) 2
Advised Elective (p. 3) 3
Free Elective 3

Hours 14

Total Hours 120

1 A grade of C- or better required.
2 Students with appropriate math skills are encouraged to take MA 141 Calculus I.
3 Students are encouraged to select courses that will fulfill an academic minor.
4 Students should consult their academic advisors to determine which courses fill this requirement.

Career Opportunities
Career opportunities include technical positions with: firms that offer environmental services; manufacturing companies that are required to maintain sophisticated environmental monitoring networks; consulting and audit firms that perform independent environmental audits; and state and federal regulatory agencies. A number of graduates have also pursued graduate degrees. Several professional certifications can be achieved through the major. Students may receive Hazardous Waste Operations and Emergency Response training and are eligible to sit for two professional certification exams: the exam for certification as an Associate Environmental Professional, and the exam Certified Hazardous Materials Manager.

Career Titles
- Environmental Compliance Inspector
- Environmental Science Professor
- Environmental Technician
- Industrial Air Pollution Analyst
- Solar Energy Systems Designer
- Transportation Engineer
- Wind Energy Engineer
- Wind Turbine Service Technicians

Learn More About Careers
NCcareers.org (https://nccareers.org/)
Explore North Carolina’s central online resource for students, parents, educators, job seekers and career counselors looking for high quality job and career information.

Occupational Outlook Handbook (https://www.bls.gov/ooh/)
Browse the Occupational Outlook Handbook published by the Bureau of Labor Statistics to view state and area employment and wage statistics. You can also identify and compare similar occupations based on your interests.

Career One Stop Videos (https://www.careeronestop.org/)
View videos that provide career details and information on wages, employment trends, skills needed, and more for any occupation. Sponsored by the U.S. Department of Labor.

Focus 2 Career Assessment (https://careers.dasa.ncsu.edu/explore-careers/career-assessments/) (NC State student email address required)
This career, major and education planning system is available to current NC State students to learn about how your values, interests, competencies, and personally fit into the NC State majors and your future career. An NC State email address is required to create an account. Make an appointment with your career counselor (https://careers.dasa.ncsu.edu/about/hours-appointments/) to discuss the results.

National Association of Environmental Professionals (http://www.naep.org/)