

**North Carolina State University Course Action Form****ES 500 – Analysis of Environmental Issues****Proposal Type: New Course****Proposed Date: Jan. 11, 2010****Department/Program:** Environmental Sciences Academic Program**Abbreviated Title:** Analy. of Environmental Issues**Scheduling:** Fall / Spring, in Every Year**Offerings:** On-Campus**Credit Hours:** 3**Contact Hours****Lecture/Recitation:** 3**Grading:** ABCDF**Enrollment Per Semester:** 20**Enrollment Maximum Per Section:** 20**Multiple Sections:** TBD**Repeatable:** No**Catalog Description**

The course teaches use of analytical approaches for solving environmental problems, and for communicating results. The course emphasizes development of student projects that lead to environmental decision-making, such as devising a resource management plan, developing a predictive model, prioritizing risk, identifying tipping points, designing new software or technologies, or predicting outcomes of environmental policies. Individual student projects fit within a team framework to simulate a work environment. Students enhance writing and seminar skills.

**Course Justification**

The proposed course will contribute to the long-standing, academic goal of defining the relationships between humans and the environment. The need for humans to seek rational approaches for coping with environmental issues drives much of the thinking in disciplines including natural and social sciences, engineering and materials, humanities, design and education. The course will contribute to the need for NC State to address a basic, fundamental area of human need for knowledge.

ES 500 will help prepare Graduate students for careers in environmental sciences, and for the writing and speaking necessary for a thesis and other graduate student projects.

**Previous Enrollment**

This course has previously been offered in Fall 2008 as a NR Special Topics course. The enrollment was 14 graduate students.

**Resources Statement**

No additional resources will be needed.

### **Consultation With Other Departments**

Materials describing the course were posted on the ESNR website, and notices inviting comments were sent to all colleges.

### **Prerequisites & Co-Requisites**

None.

### **Instructors Responsible for Course**

William E. Winner

### **Dual-Level Course**

Yes, course is a dual-level course.

### **Course Syllabus**

#### **ES 500 – Analysis of Environmental Issues**

**Section TBD**

**FALL 2010**

**3 Credit Hours**

### **Course Description**

The course is aimed at teaching students to use analytical approaches for solving environmental problems, and to communicate results. The course includes well-structured lectures on the processes of analytical thinking, reading, writing, and speaking. The course emphasizes development of student projects that lead to environmental decision-making, such as devising a resource management plan, developing a predictive model, prioritizing risk, identifying tipping points, designing new software or technologies, or predicting outcomes of environmental policies.

Lectures address issues of teamwork, ethics in data use, and the iterative process of writing. The course will allow students to polish skills in framing environmental questions, and gathering information relevant to seeking answers. Students will learn to weigh and to frame the strength of positions dealing with complex environmental problems, learn to participate in team projects and improve writing and verbal communication by presenting reports and seminars on their own work. The course simulates project development often seen in environmental careers and in professional and graduate programs where project development is required.

To ensure integration of thinking across disciplines, students will attend lectures designed to facilitate development of interdisciplinary team projects during the semester that will reinforce central concepts underlying resolution of environmental issues. Students completing the course will understand the basic concepts needed to provide resolution to environmental issues, and will be prepared to take more specialized courses in the field.

### **Learning Outcomes**

The course is designed to help prepare students for jobs and academic opportunities once they finish their graduate degree. Specific skills include:

1. Learn fundamental approaches to analytical thinking, reading, writing, and oral communication.
2. Understand fundamental issues surrounding ethical use of information, attribution, plagiarism, and consequences of misuse of data.
3. Learn to appreciate the efforts needed to succeed in a team-work format, and to respect all disciplines.
4. Become familiar with the pressures of deadlines connected with performance likely encountered in the work place, in graduate school, or in professional training after the undergraduate degree.
5. Discover the empowerment that comes with creating and communicating original thought applied to an issue of personal interest, and to understand how to apply the process to issues emerging throughout life.

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### Course Structure

Lectures will be presented in each class session. The goal of lectures is to ensure students develop a basic understanding of drawing useful, meaningful conclusions about environmental issues. The process includes instruction of how to find background information, develop tractable questions, develop results, and put results in context of other issues. Lectures also address issues of ethics in environmental problem solving and data handling, skills in organizing writing and seminars, and approaches to successful team work.

Students will complete projects by contributing a chapter to a team report, and each team will present a seminar on their work at the end of the semester. Students will self-select teams, and project topics. Each class period, the instructor will present lectures on the process of starting and finishing an analytical project related to an environmental issue. Each class period will provide specific goals for the day and assignments for project development during the week. Each student will prepare individual reports, graded as first, second, and third drafts. Students will also work in teams, and contribute their chapter to a final, graded team report. Each team will present a graded seminar at the end of the semester. The goal is to reinforce the concepts of producing unique products that have value for environmental decision-making, to provide inquiry based learning, to present students with real work demands, and to improve written and oral communication skills.

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### Instructors

**William E Winner** ([wewinner](mailto:wewinner)) - *Instructor*

**Email:** [wewinner@ncsu.edu](mailto:wewinner@ncsu.edu)

**Web Page:** [www.ncsu.edu/esnr](http://www.ncsu.edu/esnr)

**Phone:** 919-515-5780

**Office Location:** 2231 Jordan Hall Addition

**Office Hours:** By Appointment

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### Course Meetings

## Lecture

**Days:** TH

**Time:** 3:00pm - 4:15pm

**Campus:** Main

**Location:** TBD

*This meeting is required.*

## Course Materials

None.

## Requisites and Restrictions

None.

## General Education Program (GEP) Information

### GEP Category

This course does not fulfill a General Education Program category or a GEP Co-requisite.

## Transportation

This course will not require students to provide their own transportation. Non-scheduled class time for field trips or out-of-class activities is NOT required for this class.

## Grading

### Grade Components

Component	Weight	Details
First Draft	10 points	
Second Draft	20 points	
Final Draft	50 points	
Seminar	10 points	
Team Report	10 points	
Mentoring	20 points	
Participation	20 points	

## Letter Grades

**This Course uses Standard NCSU Letter Grading:**

97 ≤ **A+** ≤ 100

93 ≤ **A** < 97

90 ≤ **A-** < 93

87 ≤ **B+** < 90

83 ≤ **B** < 87

80	≤	<b>B-</b>	<	83
77	≤	<b>C+</b>	<	80
73	≤	<b>C</b>	<	77
70	≤	<b>C-</b>	<	73
67	≤	<b>D+</b>	<	70
63	≤	<b>D</b>	<	67
60	≤	<b>D-</b>	<	63
0	≤	<b>F</b>	<	60

### **Requirements for Credit-Only (S/U) Grading**

Performance in research, seminar and independent study types of courses (6xx and 8xx) is evaluated as either "S" (Satisfactory) or "U" (Unsatisfactory), and these grades are not used in computing the grade point average. For credit only courses (S/U) the requirements necessary to obtain the grade of "S" must be clearly outlined.

### **Requirements for Auditors (AU)**

Information about and requirements for auditing a course can be found at [http://www.ncsu.edu/policies/academic\\_affairs/pols\\_regs/REG205.00.5.php](http://www.ncsu.edu/policies/academic_affairs/pols_regs/REG205.00.5.php).

### **Policies on Incomplete Grades**

If an extended deadline is not authorized by the Graduate School, an unfinished incomplete grade will automatically change to an F after either (a) the end of the next regular semester in which the student is enrolled (not including summer sessions), or (b) by the end of 12 months if the student is not enrolled, whichever is shorter. Incompletes that change to F will count as an attempted course on transcripts. The burden of fulfilling an incomplete grade is the responsibility of the student. The university policy on incomplete grades is located at [http://www.ncsu.edu/policies/academic\\_affairs/grades\\_undergrad/REG02.50.3.php](http://www.ncsu.edu/policies/academic_affairs/grades_undergrad/REG02.50.3.php). Additional information relative to incomplete grades for graduate students can be found in the Graduate Administrative Handbook in Section 3.18.F at [http://www.fis.ncsu.edu/grad\\_publicns/handbook/](http://www.fis.ncsu.edu/grad_publicns/handbook/)

### **Late Assignments**

Students are responsible for completing assignments and submitting them by the deadlines given by instructors. Late assignments will only be accepted in the case of verified/documentated emergencies. See the University Attendance Policy: [http://www.ncsu.edu/policies/academic\\_affairs/courses\\_undergrad/REG02.50.3.php](http://www.ncsu.edu/policies/academic_affairs/courses_undergrad/REG02.50.3.php)

### **Attendance Policy**

#### **Attendance**

Attendance is required. After two unexcused absences, two points may be deducted from the final score for each additional absence. This policy is based upon the NCSU Attendance Policy: [http://www.ncsu.edu/policies/academic\\_affairs/courses\\_undergrad/REG02.20.3.php](http://www.ncsu.edu/policies/academic_affairs/courses_undergrad/REG02.20.3.php)

#### **Absences**

In case of emergencies (serious illness, injury, death, or illness in the family, university duties, court attendance, or religious observance), please notify me as soon as possible. This policy is based upon the NCSU Attendance Policy:  
[http://www.ncsu.edu/policies/academic\\_affairs/courses\\_undergrad/REG02.20.3.php](http://www.ncsu.edu/policies/academic_affairs/courses_undergrad/REG02.20.3.php)

### **Makeup Work**

You are responsible for all work missed and for any assignment announced on the day you were absent. This policy is based upon the NCSU Attendance Policy:  
[http://www.ncsu.edu/policies/academic\\_affairs/courses\\_undergrad/REG02.20.3.php](http://www.ncsu.edu/policies/academic_affairs/courses_undergrad/REG02.20.3.php)

### **Academic Integrity**

#### **Academic Integrity**

Students are required to comply with the university policy on academic integrity found in the Code of Student Conduct found at  
[http://www.ncsu.edu/policies/student\\_services/student\\_discipline/POL11.35.1.php](http://www.ncsu.edu/policies/student_services/student_discipline/POL11.35.1.php)  
Students are bound by academic integrity policy as stated in NCSU Code of Student Conduct.

#### **Academic Honesty**

See [http://www.ncsu.edu/policies/student\\_services/student\\_discipline/POL11.35.1.php](http://www.ncsu.edu/policies/student_services/student_discipline/POL11.35.1.php) for a detailed explanation of academic honesty.  
Students are required to uphold the University Pledge Honor and exercise honesty in completing every assignment.

#### **Honor Pledge**

Your signature on any test or assignment indicates "I have neither given nor received unauthorized aid on this test or assignment."

### **Electronically-Hosted Course Components**

Students may be required to disclose personally identifiable information to other students in the course, via electronic tools like email or web-postings, where relevant to the course. Examples include online discussions of class topics, and posting of student coursework. All students are expected to respect the privacy of each other by not sharing or using such information outside the course.

**Electronically-hosted Components:** <http://vista.ncsu.edu>

### **Accommodations for Disabilities**

Reasonable accommodations will be made for students with verifiable disabilities. In order to take advantage of available accommodations, student must register with the Disability Services Office (<http://www.ncsu.edu/dso>) located at 1900 Student Health Center, Campus Box 7509, 515-7653. For more information on NC State's policy on working with students with disabilities, please see the Academic Accommodations for Students with Disabilities Regulation at  
[http://www.ncsu.edu/policies/academic\\_affairs/courses\\_undergrad/REG02.20.1.php](http://www.ncsu.edu/policies/academic_affairs/courses_undergrad/REG02.20.1.php).

### **Policy on Discrimination**

NC State University provides equality of opportunity in education and employment for all students and employees. Accordingly, NC State affirms its commitment to maintain a work environment for all employees and an academic environment for all students that is free from all forms of discrimination. Discrimination based on race, color, religion, creed, sex, national origin, age, disability, veteran status, or sexual orientation is a violation of state and federal law and/or NC State University policy and will not be tolerated. Harassment of any person (either in the form of quid pro quo or creation of a hostile environment) based on race, color, religion, creed, sex, national origin, age, disability, veteran status, or sexual orientation also is a violation of state and federal law and/or NC State University policy and will not be tolerated. Retaliation against any person who complains about discrimination is also prohibited. NC State's policies and regulations covering discrimination, harassment, and retaliation may be accessed at [http://www.ncsu.edu/policies/campus\\_environ](http://www.ncsu.edu/policies/campus_environ) or [http://www.ncsu.edu/equal\\_op](http://www.ncsu.edu/equal_op). Any person who feels that he or she has been the subject of prohibited discrimination, harassment, or retaliation should contact the Office for Equal Opportunity (OEO) at 515-3148.

### **Course Schedule**

#### **Lecture TH 3:00pm - 4:15pm — Week 1 — TBD - TBD**

Thursday: Introductions and Course Overview, Define Teams

#### **Lecture TH 3:00pm - 4:15pm — Week 2 — TBD - TBD**

Tuesday: Lecture 1, Outlines I, Work on Team Outlines

Thursday: Lecture 2, Discuss Analytical Approaches I, Work on Team Outlines

#### **Lecture TH 3:00pm - 4:15pm — Week 3 — TBD - TBD**

Tuesday: Lecture 3, Discuss Analytical Approaches II, Start Individual Outlines

Thursday: Lecture 4, Discuss Analytical Approaches III, Work on Individual Outlines, Start First Draft

#### **Lecture TH 3:00pm - 4:15pm — Week 4 — TBD - TBD**

Tuesday: Lecture 5, Discuss Writing Structures I, Teamwork, Work on First Draft

Thursday: Lecture 6, Discuss Writing Structures II, Team Reports to Class, Work on First Draft

#### **Lecture TH 3:00pm - 4:15pm — Week 5 — TBD - TBD**

Tuesday: Lecture 7, Discuss Writing Structures III

Thursday: Lecture 8, Discuss Writing Structures IV, Individual Reports to Class, Work on First Draft

#### **Lecture TH 3:00pm - 4:15pm — Week 6 — TBD - TBD**

Tuesday: Lecture 9, Discuss Writing Formats I, Work on First Draft

Thursday: Lecture 10, Discuss Writing Formats II, **Submit First Draft to Team for Grading**

#### **Lecture TH 3:00pm - 4:15pm — Week 7 — TBD - TBD**

Tuesday: Lecture 11, Discuss Misuse of Data I

Thursday: Lecture 12, Discuss Misuse of Data II, Return First Draft to Authors, Begin Second Draft

**Lecture TH 3:00pm - 4:15pm — Week 8 — TBD - TBD**

Tuesday: Lecture 13, Discuss Attribution and Plagiarism I, Work on Second Draft

**Thursday: Fall Break**

**Lecture TH 3:00pm - 4:15pm — Week 9 — TBD - TBD**

Tuesday: Lecture 14, Discuss Attribution and Plagiarism II, Work on Second Draft

Thursday: Discuss Team Reports Formats

**Lecture TH 3:00pm - 4:15pm — Week 10 — TBD - TBD**

Tuesday: Lecture 15, Discuss Case Study I, Work on Second Draft

Thursday: Lecture 16, Discuss Case Study II, Work on Second Draft

**Lecture TH 3:00pm - 4:15pm — Week 11 — TBD - TBD**

Tuesday: Lecture 17, Discuss Teamwork I, **Submit Second Draft to Instructor**

Thursday: Lecture 18, Discuss Teamwork II, Work on Second Draft

**Lecture TH 3:00pm - 4:15pm — Week 12 — TBD - TBD**

Tuesday: Lecture 19, Discuss Teamwork III, Return Second Draft, Begin Final Draft

Thursday: Lecture 20, Discussion of Seminar Structure and Format

**Lecture TH 3:00pm - 4:15pm — Week 13 — TBD - TBD**

Tuesday: Lecture 21, Discuss Finalizing Chapters I, Work on Final Draft of Individual Chapters

Thursday: Lecture 22, Discuss Seminar Structure and Format I

**Lecture TH 3:00pm - 4:15pm — Week 14 — TBD - TBD**

Tuesday: Lecture 23, Final Writing Discussion, **Submit Final Draft of Individual Chapters**, Begin Team Report

Thursday: Lecture 24, Final Seminar Discussion, and Individual Reports to Class

**Lecture TH 3:00pm - 4:15pm — Week 15 — TBD - TBD**

Tuesday: Lecture 25, Synthesis, Work on Final Draft Team Report

**Thursday: Thanksgiving Break**

**Lecture TH 3:00pm - 4:15pm — Week 16 — TBD - TBD**

Tuesday: Student Seminars

Thursday: Student Seminars, **Submit Final Team Report**

**SIGNATURE PAGE**

**COURSE ACTION FOR ES 500**

**Recommended By**

\_\_\_\_\_  
HEAD, DEPARTMENT/PROGRAM

\_\_\_\_\_  
Date

**Endorsed By**

\_\_\_\_\_  
CHAIR, COLLEGE COURSES & CURRICULA COMMITTEE

\_\_\_\_\_  
Date

\_\_\_\_\_  
COLLEGE DEAN

\_\_\_\_\_  
Date

**Approved By**

\_\_\_\_\_  
CHAIR, UNIVERSITY COURSES & CURRICULA COMMITTEE

\_\_\_\_\_  
Date

\_\_\_\_\_  
CHAIR, COUNCIL ON UNDERGRADUATE EDUCATION

\_\_\_\_\_  
Date

\_\_\_\_\_  
DEAN OF UNDERGRADUATE ACADEMIC PROGRAMS

\_\_\_\_\_  
Date

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Approved Effective Date

DRAFT