SCIE301: Environmental Science

College of Graduate and Continuing Studies, Norwich University

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Course Description

Most of the world's crucial environmental issues and many regional conflicts are related to the degradation and/or overuse of the Earth's basic resources including air and climate, water, soils, and energy. This course will focus on the physical and chemical processes associated with the degradation of these resources as well as an examination of potential solutions. In addition, this course will address and integrate into our scientific studies, two underlying themes to all environmental issues; sustainability and human population dynamics. (3 credits)

Pre-requisites: none.

Learning Goals and Outcomes

On completion of the course, students will:

1. Evaluate current scientific knowledge related to water, soil, and energy resources, air quality, climate change, human population, and sustainability;
2. Analyze principles of applying scientific method to study environmental problems and solutions;
3. Apply scientific method and research to examine environmental problems and recommend solutions;
4. Analyze critical environmental issues affecting communities in a particular region of interest;

Teaching and Learning Strategies and Methods of Evaluation

Every week you will have lecture material, readings, discussion questions, and a lab assignment. A total of 1000 points are available in the course distributed across the components listed below, with both points and percent of final grade indicated.

As a student in this course, you have a number of responsibilities that will affect the level of learning you achieve. These responsibilities include:

1. working actively to create a challenging and useful learning experience for yourself, your discussion group and the class as a whole
2. encouraging and supporting the learning of each member of the class
3. preparing and participating fully in discussions as well as group and/or class activities
4. completing all assigned work on time or making prior arrangements if an absence of late submission is unavailable. In this course you have the opportunity to acquire knowledge and skills that will help you become effective, confident and focused in your learning.

Weekly Topics

- Week 1: Introduction to Environmental Science and Sustainability
- Week 2: Human Population Dynamics
- Week 3: Recent Climate Change
- Week 4: Ozone in the Atmosphere and the Hydrologic Cycle
- Week 5: Streams and Groundwater

- Week 6: Soils and Land Degradation
- Week 7: Energy - Fossil Fuels and Renewables
- Week 8: Future Energy Sources and Sustainability; Wrap Up

Required Textbooks

Textbooks required for this course include:

- **Cunningham, W., & Cunningham M. (2020).** ***Principles of environmental science: Inquiry and application (9th ed.).*** **McGraw Hill.**
- **Montgomery, C. (2020).** ***Environmental geology (11th ed.).*** **McGraw Hill.**

See the Required Readings for all readings in this seminar.

Time Expectations

This course concentrates 15 weeks of course material into eight weeks and is time intensive. You are expected to spend 15-20 hours/week on this course. You should use the following guidelines to help plan and manage your time.

1. Readings/Lecture material = 4-6 hours/week
2. Lab assignments = 4-6 hours/week
3. Discussion Questions = 4-6 hours/week
4. Discretionary time = 2-7 hours/week (to be used for planning ahead for projects, finishing lab assignments or working on your final project, rereading assignments, meeting with instructor etc.)

Laboratory Application Exercises

During the 8 weeks of this course, students will be responsible for the **completion** and **revision** of six laboratory application exercises which will result in one cumulative final project. Each of the six activities are designed to augment and deepen the understanding of the course concepts by having the student apply the principles of environmental science which are featured in this course. The student may need to research beyond the course material to complete these assignments. During the final two weeks of the course, each of the six exercises will be combined into a single, 1 to 1.5 hour long presentation which will generally cover the topic of Environmental Science. This final project will be due no later than **Saturday** of week 8 at 11:55 pm EST. Success in this assignment will require a diligent, ongoing effort in the preparation and revision of the individual weekly assignments. PowerPoint or Adobe Acrobat are the only acceptable formats.

Six PowerPoint presentations will be prepared during weeks 2-7. There is no assignment due during Week 1, but you may begin working on it during that time. Each PPT will include:

- A **cover slide** indicating the topic, student name, course name, date and a summary tag-line which describes the overarching theme of the topic.
- **Body of Presentation** : **10-12 slides** which cover the topic through the distillation of the material to reveal the key ideas:
    - The body of each slide will contain: primarily images and graphics, properly referenced/cited and fewer than 10 words per slide: bullet points are acceptable, sentences are not.
    - Each slide will be accompanied by speaker's notes which indicate what the presenter (the student, you) of this topic would actually say during the presentation. The student may also prepare a voice recording of these notes and append them to the PPT if they wish. These notes should cover a period of time of approximately 1-2 minutes of spoken text per slide which, again, will focus on the essence of the topic. This is more words than you think - make sure to speak them out!
- **Reference/citation slide(s)** for images and/or text in the notes (these will not have speaker's notes).

Total length of time for each presentation: 10-15 minutes maximum. You will have to prepare and practice this presentation to check the length.

Feedback will be provided by the instructor for each weekly presentation. The student will evaluate the feedback, ask questions if needed, and modify the presentation per the instructions for inclusion in the final Project.

At the end of week 7, the student will take all six re-worked Laboratory Application Exercises and combine them into one final cumulative PPT which should contain approximately **60-72 slides** of revised (if necessary) slides/notes, **5 cover/transition slides** for each topic and the appropriate **reference slides**. Total time required to present the final PPT will be approximately 1 to 1.5 hours. The grade for the final project will reflect the student's ability to modify the final work and show improvements from each individual assignment. See the Grades table for value of each presentation, and final project. Turning in all assignments on time will be worth 20 points (to raise overall score) and will be awarded at the discretion of the instructor.

Discussion Groups

In this course, you will be assigned to a small discussion group. Each week your group will discuss one or two questions. The quality of your posts and those of your fellow students will create a lively discussion and ensure that a high level of learning occurs. You are expected to contribute at least three posts to each question every week. Your answers to these questions should be substantive (approximately 300 to 600 words) and include a 1-3 sentence summary of the article/topic. They should answer the question using your own experience, if appropriate, and, very importantly, should refer to the readings of that week, using correct citations. Your last two posts should be responses to posts of your fellow group members. Responses such as, "Good point," or, "I agree," are not sufficient. Your response posts should be substantive - ask questions, point out additional thoughts, etc. Disagreement and critical feedback are part of an academic classroom, as is respect for the diversity of opinion. The first posts should be made by Wednesday at 11:59 pm at the latest. Replies to the other students are due by the end of the day Saturday. Your posts will be graded based on how well they demonstrate subject knowledge (whether you've read and understood the assigned readings), critical analysis, effective writing, timeliness, and a respectful, academic tone. For more information about what is expected in regard to discussion postings, please review the Weekly Discussion Rubric and Discussion Guidelines in the Grading Guidelines and Rubrics.

Late Work

It is important that writing assignments and discussion posts be completed on time. Extensions of deadlines will be given only for serious extenuating circumstances. In the absence of such extensions, assignments may be downgraded for lateness at the discretion of the instructor.

Grades

Here is a breakdown of your course assessments:

Assignments/Activities/Papers	Total Points	Weights (%)
Weekly Discussions: 8 at 50 points each	400 points	40 %
Laboratory Application Exercises: 6 at 80 points each	480 points	48 %
Final Cumulative Project	120 points	12 %

Letter grades for the course will be based on the following grading scale.

Letter Grade	Percentage	Grade Point
A	93-100%	4.0
A -	90-92.9%	3.7
B +	87-89.9%	3.3
B	83-86.9%	3.0
B -	80-82.9%	2.7
C +	77-79.9%	2.3
C	75-76.9%	2.0
C -	73-74.9%	1.7
D +	70-72.9%	1.3
D	67-69.9%	1.0
D-	63-66.9%	0.7
F	0-62.9%	0.0

For complete information on the Grading Policy for Bachelor Degree students, please refer to the CGCS Online Catalog (Sub-Section of Catalog on "Grades.")

Students are expected to maintain a grade point average of a minimum of 2.0 to remain in good academic standing.

All written work for this course requires use of APA formatting. Please refer to the **Grading Guidelines and Rubrics** for further information regarding APA formatting.

Academic Honesty and the Norwich University Honor Code

A student must submit work that represents the student's own original analysis and writing. Copying another's work is not appropriate. If the student relies on the research or writing of others, the student must cite those sources. Words or ideas that require citations include, but are not limited to all hardcopy or electronic publications, whether copyrighted or not, and all verbal or visual communication when the content of such communication clearly originates from an identifiable source. While students are encouraged to seek editing feedback, extensive revisions of one's work by another person is considered a lack of academic honesty, as it is representing another student's work as one's own.

For more information see:

Academic Dishonesty
Academic Integrity
Norwich University Honor Code

Copyright Notice

Section 504 of the Rehabilitation Act of 1973/ADA

Please consult Appendix H: University Policy - Section 504 of the Rehabilitation Act of 1973/Americans with Disabilities Act (ADA) for instructions on obtaining an accommodation.

Disclaimer: Please note the specifics of this Course Syllabus are subject to change. Students are responsible for abiding by any such changes. Your instructor will notify you of any changes.