

EVPP 302 Syllabus

Environmental Science: Biomes and Human Dimensions

Lecture: MW Nguyen Engineering Building 1110 **Lab:** MW David King Jr. Hall 3031;
1:30-4:15pm

SPRING 2020

Instructors:	Dr. Cynthia Smith	TA: Chelsea Gray, MS
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Office hours:	M &W 1:15-2:30pm, or by appointment	Office hours by appointment

Course Description and Goals: Together with EVPP 210 and 301, this course is part of a three-semester sequence for Environmental Science majors, which provide authentic experiences with environmental issues to prepare students for future careers.

Learning Outcomes

- Students will demonstrate the ability to synthesize information and execute experiments that provide a measurable understanding of human impacts on natural resources.
- Students will demonstrate the ability to analyze research papers and data, assess reliability, interpret results, draw reasonable conclusions and clearly communicate these in written and oral form.
- Students will gain insight into environmental career opportunities through coursework and interaction with natural resource professionals across environmental industries.

Texts: S&S: Elements of Ecology. T.M. Smith and R.L. Smith. 9th ed.
Sadava et al.: Life: The Science of Biology. Sinauer and Macmillan. 11th Ed.
Other readings and viewings as assigned, found in Course Modules in Blackboard

Topics include: Introduction to human dimensions of the environment, ecosystem structure and function, water and the environment, environmental policies and decision-making and sustainability science, with an emphasis on aquatic and terrestrial biome biodiversity, energy generation and waste management.

Course Content and Instructional Methods: The course consists of a coupled lecture and lab; both must be taken concurrently and your grade will depend on your performance in both venues. The initial lecture portion of the course provides essential content knowledge and theory. The later portion of the course will focus more on applied skills, including researching and collecting authentic environmental data. Due to the project-based nature of the course, the schedule and some assignments are subject to change.

Course Policies: Students are expected to read or view assigned text readings, videos and articles prior to coming to class. Any student missing a graded assignment (including tests) for health reasons or other extenuating circumstances may be required to submit a doctor's statement or other appropriate documentation to avoid a zero for that assignment. All late assignments will be docked 10% per day that they are late. Participation is essential to receive full credit on any course assignment. Regarding electronic devices (such as laptops, cell phones, etc.), please be respectful of your peers and your instructor and do not engage in activities that are unrelated to class. Such disruptions show a lack of professionalism and may impact grades.

Communication: Clear, concise, grammatically correct communication is expected on all assignments, presentations and communications. All emails to professors and lab instructors must be professional and include proper introduction and be signed with your first and last name. Please use your GMU email in all correspondence regarding this course. To improve your writing, we highly encourage visits to the Writing Center. There are 4 locations Please register and use them.

<https://writingcenter.gmu.edu/about-the-wc>

Major Course Assignments:

Exams

Students will take two mid-term exams and a cumulative final based on a synthesis of readings, lecture and discussion material. Exams are short answer/ essay format, allowing students to demonstrate their synthesis of course concepts.

Stream Bioassessment Lab Report

Students will visit two on-campus stream sites draining impacted areas. Macroinvertebrate samples and water quality data will be collected and analyzed. Each student will prepare a lab report comparing results from the sites.

Cradle-Grave Product life-cycle analysis presentations

To gain a broad understanding of global environmental impacts from products, each student will research and present to class, a product life-cycle analysis, which describes environmental impacts associated with all the stages of a specific product's life (i.e., from raw material extraction through materials processing, manufacture, distribution, use, repair, maintenance, and disposal or recycling). Research will be conducted outside of class. Each presentation has an 8-minute limit.

IMRAD Research Paper Analysis

Four times during the semester, students will work in groups to fully analyze relevant research papers during class time.

Lecture	Points	
Exam 1	100	
Exam 2	100	
Cradle-Grave Product life-cycle analysis presentation (LCA)	100	
4 Article reviews IMRAD 25 x 4	100	
8 Pre-class questions 5pts each	40	
Energy Sectors Assignment	10	
Community Ecology Assignment	10	
Final Exam	100	
Lecture Total		560
Lab		
Campus Heat Island	12	
Campus Biodiversity	12	
Chesapeake Bay POCs	12	
Stream Bioassessment report	80	
Honeybees	12	
Leesylvania Park study	12	
PWC Landfill study	12	
Home Energy Audit	12	
Watershed Mapping	12	
Soils Profiling	12	
Lab Total		188
Course Total*		748

**Course total subject to change with additional assignments*

Grading Scale

- 92% = A
- 90% = A-
- 82% = B
- 80% = B-
- 72% = C
- 70% = C-....

PreClass Reading Quizzes

For deeper classroom discussions, and to motivate students to read chapters and articles *in advance* of class, eight very short 5-point, timed 60min quizzes are available via blackboard. Students can earn up to 40 points from these.

Assignments: Three 10 point assignments on Community Ecology, Energy Sectors and Wastewater will be submitted.

Extra Credit: Occasionally points will be allocated for in-class activities. These points can only be earned by students present in class. Additional extra credit points may be earned by attending and reporting (including photos) on related seminars and outreach activities (e.g. stream clean-ups, conferences, deer check stations, etc.). Submit extra credit via the "Extra Credit" tab on blackboard.

Disability Statement: Disability Services at George Mason University is committed to providing equitable access to learning opportunities for all students by upholding the laws that ensure equal treatment of people with disabilities. If you are seeking accommodations for this class, please first visit <http://ds.gmu.edu/> for detailed information about the Disability Services registration process. Then please discuss your approved accommodations with me. Disability Services is located in Student Union Building I (SUB I), Suite 2500. ods@gmu.edu | Phone: (703) 993-2474

Diversity and Inclusion

We take pride in the diversity of our university community and especially encourage students to share their diverse perspectives in the classroom. We value individuals and their differences.

Academic Integrity: George Mason University has an Honor Code, which requires all members of this community to maintain the highest standards of academic honesty and integrity. Sharing ideas, vigorous discussion and debate are encouraged. Cheating, plagiarism, lying, and stealing are prohibited by the code. It is the responsibility of all members of the community, both students and teachers, to report violations of the code. Collaborative projects may be divided up so that individual group members complete portions of the whole, provided that group members take sufficient steps to ensure that the pieces conceptually fit together in the end product. Other projects are designed to be undertaken independently. In the latter case, you may discuss your ideas with others and conference with peers on drafts of the work; however, it is not appropriate to give your paper to someone else to revise. You are responsible for making certain that there is no question that the work you hand in is your own. <https://oai.gmu.edu/mason-honor-code/>