Environmental Science II: Biology
ENRP6102

Wednesday, 6:10 to 8:40pm
Phillips Hall, 413
Instructor: Dr. Mariana Abarca
E-mail: maz@gwmail.gwu.edu
Office hours: By appointment

This course provides an introduction to biology, covering the essential concepts and processes necessary to understand complex biological phenomena. At the end of the course students will have a solid understanding of cell, organismal and ecosystem function; and will be able to integrate this information to understand environmental challenges such as habitat destruction, global climate change, biological invasions and extinction.

Reading materials

Textbooks

Course outline

January 13th
Introduction to class
Biochemistry and cell biology

January 20th
Genetics
Evolution I
Presentation: Photosynthetic sea slugs (Kevin, Michael, Rhiannon)

January 27th
Evolution II
Organismal biology
Presentation: Adaptive radiation (Amy, Jasmine, Kristen)

February 3rd
Trophic interactions
Presentation: Dodo bird (Kevin, Michael, Rhiannon)

February 10th
Biodiversity I.
Biomes and ecosystem functioning
Presentation: Colony collapse disorder (Sam, Robert, Ming)
February 17th  Biodiversity II.
Spatial patterns of biodiversity and ecosystem services
Presentation: Invasive plants (Martha, Shannon, Isaiah)

February 24th  Global change biology: Fragmentation, deforestation, nitrogen pollution.
Presentation: Fragmentation (Marta, Shannon, Isaiah)

March 2nd  Global change biology II: Climate change
Mid-term exam
Presentation: Production of methane as a GHG through agriculture (Fritz, Taylor, Kaita)

March 9th  Population biology
Human Populations
Presentation: Biofuels (Zach and Amanda)

March 16th  Human biology
Presentation: Plant secondary metabolites (Fritz, Taylor, Kaita)

March 23rd  Environmental health and toxicology
Presentation: Lead poisoning (Amy, Jasmine, Kristen)

March 30th  Spring Break, no Class

April 6th  Epidemiology

April 13th  Agriculture
Presentation: Effects of global warming on crops (Zach and Amanda)

April 20th  Conservation biology.
Last day of classes, term paper due!
Presentation: GMOs (Sam, Robert, Ming)

April 26th  Make-Up day

TBA  Final examination

**Evaluation**
Mid-term exam: 100 points
Final exam: 100 points
Class assignments: 98 points (7 per class)
Oral presentations: 102 points
Term paper: 100 points
**Total:** 500 points
Oral presentation guidelines
Each team (2 to 3 people) will have 30 minutes to present a topic of their choosing and lead a group discussion about it. The suggested time budget is: 15 min of oral presentation and 15 min of class discussion or activity. Each team will present two topics during the semester.

Term paper guidelines
Each student or team of two students will write a review about a relevant environmental topic of their choosing, incorporating at least 15 primary literature references. Students can write about a topic they previously presented during the semester or select a different topic. A title should be submitted for approval by February 5th. I am willing to review and provide feedback on outlines and earlier versions of manuscript upon request. Term papers should not exceed 10 pages (double space, 12 point standard font).

Additional policies and information
• **Blackboard**: Blackboard will be used to communicate with students. Please make sure that you can access the course and that you regularly check whatever email account Blackboard uses for you. If you have problems with Blackboard, contact the Helpdesk at 202-994-5530 or helpdesk.gwu.edu.

• **Attendance**: While I won’t take attendance, you are expected to be in class each week and there will be a graded assignment each class. If you miss a class, please get notes from a classmate, download assigned materials from Blackboard, and complete any pre-class work (even if it’s not graded). It’s fine to miss a class to observe a religious holiday, but you should let me know about such cases at the start of the semester.

• **Turning Things In**: Unless otherwise specified, assignments are due both in hardcopy at the start of class on the due date and as electronic files. Multi-page assignments should be stapled; covers are unnecessary. All assignments will be checked for plagiarism.

• **English for Academic Purposes Writing Support Program**: If English is not your first language, you may wish to take advantage of GW’s Writing Support Program which offers free, one on one service. Visit [http://www.gwu.edu/~gwriter](http://www.gwu.edu/~gwriter) for details.

• **Late Work**: Unless you’ve made arrangements with me in advance, late work will be penalized with a one grade step reduction (e.g. from an A- to a B+) per day.

• **Laptops**: You are welcome to use a laptop during class to take notes or to refer to readings. Please refrain from checking email and social media platforms; doing so is extraordinarily distracting, both for you and for the people sitting behind you! Cell phone use & texting is prohibited.

• **Collaboration**: Unless specified in writing by the instructor, all assignments must be completed by students working on their own.
• **Academic Honesty**: All examinations, papers, and other graded work products and assignments are to be completed in conformance with the George Washington University Code of Academic Integrity. (See [http://www.gwu.edu/~ntegrity/code.html](http://www.gwu.edu/~ntegrity/code.html)).

• **Incompletes**: A student must consult with the instructor to obtain a grade of I (incomplete) no later than the last day of classes in a semester. At that time, the student and instructor will both sign the CCAS contract for incompletes and submit a copy to the ENRP Director.

• **Grades**: No grade changes can be made after the conclusion of semester, except for clerical error.

• **Syllabus**: This syllabus is a guide to the course. Sound educational practice requires flexibility and the instructor may revise content and requirements during the semester.

• **Accommodation for Students with Disabilities**: If you need additional time or other accommodation due to a disability, let the instructor know in first week of the class. For accommodation on the basis of disability, you need to provide documentation to the Office of Disability Support Services.

• **University Student-Support Resources**: Help in addressing academic, social, and personal issues is available 24 hours a day, 7 days a week through the University Counseling Service which can be reached at 202 994 5300.

• **Grading**: Grades for the course as a whole reflect the following philosophy:

  • **A Excellent**: Exceptional work for a graduate student. Work is unusually thorough, well-reasoned, creative, methodologically sophisticated, and well written. Work is of exceptional, professional quality.

  • **A- Very Good**: Very strong work for a graduate student. Shows signs of creativity and a strong understanding of appropriate analytical approaches, is thorough and well-reasoned, and meets professional standards.

  • **B+ Good**: Sound work for a graduate student; well-reasoned and thorough, without serious analytical shortcomings. Indicates the student has fully accomplished the basic objectives of this graduate course.

  • **B Adequate**: Competent work for a graduate student with some evident weaknesses. Demonstrates competency in the key course objectives but the understanding or application of some important issues is less than complete.

  • **B- Borderline**: Weak work for a graduate student but meets minimal expectations. Understanding of key issues is incomplete. (A "B-" average in all courses is not sufficient to sustain 'good standing'.)

  • **C+/ C / C- Deficient**: Inadequate work for a graduate student; rarely meets minimal expectations. Work is poorly developed or flawed by numerous errors and misunderstandings of important issues.

  • **F Unacceptable**: Work fails to meet minimal expectations or course credit for a graduate student. Performance has consistently failed to meet minimum course requirements. Weaknesses and limitations are pervasive.