

**Environmental Science II: Biology**  
ENRP6102

Wednesday, 6:10 to 8:40pm  
Phillips Hall, 109  
Instructor: Dr. Michael DeNieu  
E-mail: mdenieu@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** (available on loan at Gelman library for 2 hours)

Reece, J. B., Urry, L. A., Cain, M. L., Wasserman, S. A., Minorsky, P. V., Jackson, R., & Campbell, N. A. 2014. *Campbell biology*. Pearson, Boston.  
Belk, C. M., & Maier, V. B. 2007. *Biology: Science for life with physiology*. Upper Saddle River, NJ: Pearson Prentice Hall.  
Withgott, J., & Laposata, M. 2015. *Essential environment: The science behind the stories*. Pearson, Boston.  
Christensen, N. & Leege, L. 2015. *The environment and you*. Pearson, Hoboken, N.J.

**Course outline**

|                           |   |
|---------------------------|---|
| January 18 <sup>th</sup>  | Introduction to class<br>Scientific method and statistical inference        |
| January 25 <sup>th</sup>  | Molecular biology and genetics  |
| February 1 <sup>st</sup>  | Evolution and organismal biology  |
| February 8 <sup>rd</sup>  | Trophic interactions  |
| February 15 <sup>th</sup> | Biodiversity I.<br>Biomes and ecosystem functioning                         |
| February 22 <sup>th</sup> | Biodiversity II.<br>Spatial patterns of biodiversity and ecosystem services |
| March 1 <sup>st</sup>     | Global change biology: Fragmentation, deforestation, nitrogen pollution.    |
| March 8 <sup>nd</sup>     | Global change biology II: Climate change<br>Mid-term exam                   |
| March 15 <sup>th</sup>    | Spring Break, No class  |

|                        |   |
|------------------------|---|
| March 22 <sup>th</sup> | Human biology   |
| March 29 <sup>rd</sup> | Environmental health and toxicology                           |
| April 5 <sup>th</sup>  | Population biology<br>Human Populations                       |
| April 12 <sup>th</sup> | Epidemiology  |
| April 19 <sup>th</sup> | Agriculture   |
| April 26 <sup>th</sup> | Conservation biology.<br>Last day of classes, term paper due! |
| May 3 <sup>rd</sup>    | 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 at least 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 8<sup>th</sup>. 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](http://helpdesk.gwu.edu).
- ❖ **Attendance:** While I won't take attendance, you are expected to be in class each week. Policy analysis is a skill that is learned by doing and we will be practicing these skills in

class. If you need to miss a class, please let me know in advance, get notes from a classmate, download assigned materials from Blackboard, and complete any pre-class work (even if it's not graded). If you repeatedly miss class, you can expect a decrease in your class participation/engagement grade. 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.

- ❖ Class Decorum: Texting, side conversations, or using your laptop for anything other than taking notes is an inappropriate use of class time. Those who do these things may think their actions are unobtrusive, but they are actually quite conspicuous. It's distracting both to me and to your classmates, and will result in a significant decrease in your class participation/engagement grade.
- ❖ Turning Things In: Unless otherwise specified, assignments are due in hardcopy at the start of class on the due date; electronic submission of assignments is not permitted. Multi-page assignments should be stapled; covers are unnecessary.
- ❖ 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> 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.
- ❖ 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>).
- ❖ Incompletes: A student must consult with the instructor to obtain an "incomplete" before the last day of class. The student and instructor will sign the CCAS contract for incompletes and submit it 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 assignments and 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.