

ENVS/BIO 107 – Environmental Biology

Syllabus

Contents

Course Information	2
Instructor Information	2
Textbook and Course Materials	2
Course Description	2
Credit Hours	2
Prerequisites and/or Co-requisites	3
Learning Outcomes	3
Course Format and Design	3
University Information and Policies	3
University Mission Statement	3
Special Needs and Accommodations	4
Honor Code	4
Student Handbook	4
Technology Requirements	4
Instructional Technology	5
Learning Center	5
Hofheimer Library	5
Nondiscrimination Statement	5
Diversity Statement	5
Course Policies	6
Participation	6
Late Work	6
Makeup Work	6
Extra Credit	6
Netiquette Guide	6
Strategies for Success	7
Course Grades and Assignments	7
Grade Allocation	7
Grading Scale	8
Assignment Descriptions	8
Course Schedule	9
Collaborative Learning	10
Hints for Success in Your Online Course	10

Course Information

Instructor Information

See the online course in Blackboard for instructor contact information and availability.

Textbook and Course Materials

Text: Fisher, M. (ed.), 2018. “Environmental Biology” (Open Educational Resource – free to students) [Access textbook free online.](#)

Apps for lab use (available from the Apple App Store or Google Play): Merlin Bird App from the Cornell Lab of Ornithology (free); A Plant Identification App, such as Picture This (free) or LeafSnap (free)

A Smart Phone with a built-in Digital Camera OR a Digital Camera

Using the recommended apps on a smart phone is an ideal way to survey the biodiversity in your local area. If you do not have a smart phone, you may substitute web sites that help identify organisms, or field guides, available from many public libraries. If you do not have a smart phone with built-in digital camera, you will need a separate digital camera to document your lab investigations in order to obtain full credit on your labs.

You must also have the following lab supplies:

Lamotte Earth Force® Low Cost Water Test Kit, available from the [VWU bookstore](#) or from Amazon: [Earth Force Low-Cost Water Quality Monitoring Kit](#)

Owl Pellet Dissection Kit, available from the [VWU bookstore](#) or from Amazon [Owl Pellets \(Set of 5 with Bone Chart\)](#) (provide your own tweezers and toothpick) or [Pkg \(2\) Owl Pellet Kit with Tweezers, Pointing Stick and 8-Page Booklet](#) including an ID card, toothpick, tweezers, and gloves.

Binoculars – can be low cost (under \$25), preferably 7-10x (the resulting image is between 7 and 10 times larger than actual size). Please feel free to use one you already own or borrow a pair of binoculars from a family member or friend.

Course Description

A study of fundamental ecological interactions and how environmental issues, such as water pollution, threats to biodiversity, human population growth, overfishing, and climate change ultimately impact organisms and ecosystems. This course is taught in an online format, but uses a combination of hands-on lab investigations, plus selected online simulations.

Credit Hours

4

Prerequisites and/or Co-requisites

None

Learning Outcomes

Students who successfully complete this course will be able to:

- Describe how humans impact the environment through resource use, pollution, and the size of the human population, collectively known as the ecological footprint.
- Explain foundational ecological concepts, such as energy flow, nutrient cycling, evolution, and the different types of species interactions.
- Explain the different ways that natural resource managers work to conserve biodiversity and threatened or endangered species.
- Differentiate between the different types of effects that different pollutants have on organisms and ecosystems.
- Contrast conventional and sustainable practices for agriculture, fisheries, and the built environment.

Course Format and Design

This course is offered fully online in a modular format. The course is designed to provide students with a variety of learning experiences and equip students with learning resources and activities that enable learning outcomes. **If there is any reason any assignments in the course may present difficulty for you, please notify your instructor immediately.**

The lab portion of this course requires hands-on science investigations, which will then be reported online. As a part of two major course projects, students will survey the biodiversity (plants, birds, etc.) in different habitats near their home and will sample local water bodies and analyze the water samples for different pollutants. Students will also use selected online simulations or investigations (Lizard Evolution, WildCam, Carbon Footprint Calculator, etc.), as appropriate.

University Information and Policies

University Mission Statement

Prepare each student for a meaningful life and career

The mission of Virginia Wesleyan University is to engage students of diverse ages, religions, ethnic origins, and backgrounds in a rigorous liberal arts education that will prepare them to meet the challenges of life and career in a complex and rapidly changing world. In this endeavor, the university employs a wide range of approaches to teaching and learning and provides opportunities to connect the study of the liberal arts with practical learning experiences on campus, in the Hampton Roads region, and

throughout the world. In accord with our United Methodist heritage, Virginia Wesleyan aspires to be a supportive community that is committed to social responsibility, ethical conduct, higher learning, and religious freedom.

Special Needs and Accommodations

Virginia Wesleyan University is committed to giving all students the opportunity of academic success. If you are a student who is requesting accommodations based on the academic impact of a disability or if there is any reason any assignments in the course may present difficulty for you, please notify your instructor immediately. If you do not have an accommodations letter for this course, you will need to visit or call for an appointment with a disability support specialist to coordinate reasonable accommodations. Visit [Virginia Wesleyan University Disability Support Services](#) on the Web.

Honor Code

As a liberal arts university, Virginia Wesleyan is committed to values of citizenship and social responsibility fundamental to a community of scholars. People who join this academic community agree to maintain academic honesty and, therefore, not to cheat, lie, falsify data, or commit plagiarism or academic theft. Refer to the [Virginia Wesleyan Honor Code](#) for definitions, rights, responsibilities, and procedures.

Student Handbook

All students are expected to uphold the university's mission statement and abide by the university's honor code, the Virginia Wesleyan Creed, and all other standards that govern the conduct and behavior of students. For more information, refer to the [student handbook](#).

Technology Requirements

Online courses require that you have access to a computer with a reliable Internet connection (high-speed access recommended). A backup plan is recommended in the event of an Internet outage.

You will need to have access to and be able to use the following:

- A Web browser (Google Chrome or Mozilla Firefox is recommended.)
- Adobe Acrobat Reader ([Get Adobe Acrobat Reader free.](#))
- Microsoft Office 365 ([Get Office 365 free.](#))
- A Virginia Wesleyan e-mail account to use when submitting assignments
- Access to the apps listed on page 2 of the syllabus

For assistance with passwords and user IDs, contact the [Virginia Wesleyan Help Desk](#).

For assistance with Blackboard, please contact [the Help Center](#).

Instructional Technology

For information, support, and training in the academic software of the university, refer to the university's department of [Instructional Technology](#).

Learning Center

Contact the [Learning Center](#) for the following services:

- Academic advocacy and communication
- Academic planning and workshops
- Academic tutoring
- Computers and assistive technology
- Disability support services
- Individualized writing assistance
- Speech lab

Hofheimer Library

The Hofheimer Library supports the Virginia Wesleyan community by providing services, resources, and facilities that advance the academic program. Visit the [Hofheimer Library](#) on the Web for information, resources, services, and hours.

Nondiscrimination Statement

Virginia Wesleyan University does not discriminate against students of any race, religion, color, creed, gender, national and ethnic origin, age, marital status, covered veteran status, handicap, sexual orientation, or any other legally protected status in administration of its educational policies, admission policies, scholarship and loan programs, and athletic and other university-administered programs and facilities.

Diversity Statement

Virginia Wesleyan University values the benefits of its diversity. We are committed to educating the campus community about issues of diversity. The campus promotes freedom of thought and opinion in the spirit of mutual respect. Our campus community is enriched through programs, activities, and interactions by celebrating our uniqueness as well as our commonalities.

This commitment to diversity links programs and services that support the distinctiveness of individuals regardless of racial and ethnic backgrounds, physical and cognitive abilities, family status, sexual orientation, gender identity, socioeconomic status, age, and religious and spiritual values.

An essential feature of this community is an environment in which all students, faculty, administrators, and staff are able to study and work free from bias and harassment. Such an environment contributes to the growth and development of each member of the community.

Course Policies

Participation

Students are expected to log into the course at least every 2-3 days, with submissions required 1-2 times per week. Regular course participation is expected, especially for discussion board postings. It is difficult to catch up if you get behind, so please be in the regular habit of logging into the course and working on the course materials.

Late Work

This course is offered in a shortened time frame (7-7.5 weeks total), so it is critical that all work be submitted on time. Assignments and discussion board postings that are submitted late will have 10% deducted from the grade per day, up to a maximum of 50% off for items submitted 5 or more days late. Items submitted more than 1 week late will typically not be accepted.

Makeup Work

The course instructor may allow makeup work under extenuating circumstances, on a case by case basis, and only for legitimate emergencies. Please contact your course instructor to discuss the particulars of your case, as soon as possible.

Extra Credit

This course does not include any opportunities for extra credit. Please make the most of your opportunities to earn regular course credit by submitting your work on time.

Netiquette Guide

- Ask questions - If you find something confusing or want to know more, do not hesitate to ask questions. Make sure to post your questions in the appropriate thread.
- Participate - Do not hide in the background; it is not fair to lurk and let others do all the work. Contribute to discussions to get as much as possible from the course and to maintain your participation grade.
- Do not dominate a discussion - Share your knowledge, but not to the point of excluding others. If you have something to offer, please share it, but allow everyone to contribute equally to a discussion.
- Be intellectually rigorous - Do not excuse sloppy or illogical thinking. Challenge yourself and one another.
- Be tactful - Be critical of ideas, but remember there are other people involved. Be tactful and kind. You can hurt the feelings of a person reading your post.
- Forgive other students' mistakes - Do not correct others, even if you follow the rules of netiquette and use good manners. Just because you do not agree with a student's post does not mean that he or she is wrong. Instead, offer a different perspective to encourage further discussion.
- Read the whole thread before posting - Read all the posts in a thread before responding so you don't repeat what others have already said. Try to contribute clarifying information or a new idea to a discussion.

- Be concise - Do not waste people's time by posting basic, repetitive information. Make your point clearly and quickly.
- Reread and check your posts - Practice professionalism. Be mindful of what you say online; others will likely judge the tone and quality of your writing. Reread your posts and edit for clarity and mechanics.
- Cite your sources - When you use a source, cite it properly. Give credit where credit is due. Include links where appropriate. For lab posters, sources must be cited to receive credit for the background research you have done.
- Maintain confidentiality - Respect your classmates' privacy. Do not repeat the personal information that others share.
- Report technical problems - If the platform is not working properly, please let your instructor know as soon as possible

Strategies for Success

You are encouraged to regularly participate in this course, logging in at least every 2-3 days. The easiest way to have your grade drop is to put the course material off and wait until the last minute. You will get out of the class what you put into it.

Course Grades and Assignments

Grade Allocation

Assignment	Point Values
Weekly Quizzes 7 Quizzes x 30 points each	210 points total
Interactive Web Sites and Simulations 7 x 10 points per week	70 points total
Weekly Labs (Excluding the 2 Major Lab Projects) 4 weeks x 50 points per week	200 points total
Water Quality Lab (2 weeks) Study Presented in a Poster	100 points
Biodiversity Field Project 10 points Topic Selection 10 points Progress Report in Week 4 100 points Final Poster	120 points total
Weekly Discussions 5 discussions x 30 points each	150 points total
Reflective Essays 3 essays x 50 points each	150 points total
Total Points Possible	1000 points

Grading Scale

A	920–1000 points
A-	900–919 points
B+	880–899 points
B	820–879 points
B-	800–819 points
C+	780–799 points
C	720–779 points
C-	700–719 points
D+	680–699 points
D	620–679 points
D-	600–619 points
F	0-599 points

Assignment Descriptions

Biodiversity Project

For the first major project, you will be selecting at least 3 habitats and repeatedly sampling them, using techniques appropriate to your study organisms. You should pick sites that differ somewhat in their physical characteristics, such as wet to dry, high to low elevation, high to low salinity, young to intermediate to mature (old) forest. In these sites, you will survey them several times over 3-4 weeks, and quantify the species seen in each habitat. From there you will summarize your techniques, results, and conclusions in a poster, and share that with your classmates in a virtual poster session. You may pick whichever type of organisms you prefer (birds, plants, zooplankton, tide pool invertebrates, etc.). In week 2 you will propose a type of organism and specific sampling locations. In weeks 3-6 you will conduct field observations, and in week 7 you will share your results with your classmates in an interactive poster session.

Water Quality Lab Project

The second major project is a chance for you to investigate water bodies near your home. You will sample 3 local water bodies, using the sample bottles included in the low-cost water test kit. These can be streams, large rivers, ponds, lakes, or even stormwater ponds or ditches filled with water. **If you have any questions on selecting sites near you, please contact your instructor.**

You will run a series of analyses on these water samples (pH, turbidity, temperature, dissolved oxygen, nitrate phosphate, Fecal Coliform Bacteria, etc.) and record your data for each of these parameters. To do this, you will follow carefully the directions included with the kit, and record your data for each sample. You will repeat most of these measures on 2 additional days (ideally, 2-3 days apart) and these samplings can occur during module 5 or 6. You may wish to sample when the conditions differ, such as before and after a rainstorm.

Your results from the water quality tests will be reported on a poster, and shared with your classmates in a virtual poster session at the end of module 6. You will be asked to comment on your classmates' posters during the last module.

Course Schedule

Refer to the [academic calendar](#) for important university dates.

The instructor reserves the right to make necessary changes, additions, deletions, and revisions to the course schedule as needed.

Module	Readings	Assignments Due
1 Introduction to Environmental Science and Ecology	Fisher, "Environmental Biology" Open Oregon Pressbooks Chapter 1 and Chapter 2	<ul style="list-style-type: none"> World Mapper Simulation (10 points) Labs #1 (Tree ID) and 2 (Bird Behavior) (25 points each) Discussion forum – Environmental Issues (30 points total) Quiz 1 (30 points)
2 Ecosystem Ecology: Energy flow, Nutrient Cycling, and the Biosphere	Fisher, "Environmental Biology" Open Oregon Pressbooks Chapter 3	<ul style="list-style-type: none"> Biome and Interactive Map Simulations (10 points total) Labs #3 (Bird Counts) and 4 (C/N Footprint) (25 points each) Submit topic for Biodiversity Project (10 points) Reflective Essay #1 (50 points) Quiz 2 (30 points)
3 Community Ecology, Population Ecology, and the Human Population	Fisher, "Environmental Biology" Open Oregon Pressbooks Chapter 4	<ul style="list-style-type: none"> Competition and Human Population Simulations (10 points total) Labs #5 (Owl Pellet) and 6 (Human Demography) (25 points each) Discussion forum – Trophic Cascades in Salt Marshes (30 points total) Quiz 3 (30 points)
4 Biodiversity and Conservation	Fisher, "Environmental Biology" Open Oregon Pressbooks Chapter 5	<ul style="list-style-type: none"> Natural Selection Simulations (10 points) Labs #7 (Virtual Lizard Evolution) and 8 (WildCam) (25 points each) Biodiversity Lab Project Draft Poster (10 points) Reflective Essay #2 (50 points) Quiz 4 (30 points)
5 Water Availability, Use, and Pollution	Fisher, "Environmental Biology" Open Oregon Pressbooks Chapter 7	<ul style="list-style-type: none"> Stream IBI Simulation (10 points) Start Water Quality Lab Project (due next week) Discussion forum – Apo Island Reef and Fisheries (30 points total) Quiz 5 (30 points)

Module	Readings	Assignments Due
6 Environmental Hazards and Air Pollution	Fisher, "Environmental Biology" Open Oregon Pressbooks Chapter 6 and Chapter 10	<ul style="list-style-type: none"> Greenhouse Effect Simulations (10 points) Complete Water Quality Lab Project Poster (100 points) Quiz 6 (30 points)
7 Conventional vs. Sustainable Practices	Fisher, "Environmental Biology" Open Oregon Pressbooks Chapter 9 and Chapter 11	<ul style="list-style-type: none"> Fish Game Simulation and "The Anthropocene" Simulation (10 points) Complete Biodiversity Lab Project Poster (100 points) Reflective Essay #3 (30 points total) Quiz 7 (30 points)

Collaborative Learning

Collaborative learning, through engagement of other students, is a key ingredient of participatory learning. Students can expect each online course to have some degree of collaborative learning. The type of collaboration may be minimal and take the form of weekly small group discussions.

Alternatively, the type of collaboration may be a major virtual team project that requires weekly and substantive participation from all members. Regardless of the type of collaborative learning, all students are expected to participate in a timely, substantive, on-subject, professional, and complete manner.

Hints for Success in Your Online Course

1. Be sure you have access to proper computer equipment, Internet service, and software as listed above.
2. Designate certain times each week to work on your course. Plan ahead, avoid procrastination, even out your workload, and absorb material before moving on.
3. Have a specific achievement goal for each log-on session to help you accomplish what you need to get done and avoid distractions
4. Actively participate in discussions. Meaningful interchange will lead to better understanding of various aspects of the course and also contribute to the personality and warmth of the online class community.
5. If assigned to an online team or study group, work with your team members actively from the start. Thus, team members will benefit from the other group members' ideas and experiences and can depend on one another to complete assigned tasks.
6. Practice an informal but organized, concise, and clear writing style that aids online communication.

7. Venture beyond the classroom. The Internet medium of the online classroom gives ready access to electronic libraries and to pertinent websites that offer a significant advantage in understanding graduate-level material.
8. Your class may occasionally use short multimedia components to enrich the learning environment. Follow the instructions provided.