

Syllabus for Biology 370/ENVR 370
Seminar: Evolutionary Ecology
Fall 2013

Instructor: Dr. Frank T. Kuserk
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Office Hours: MWF 10:00 AM - 11:30 AM and by appointment

Class Times & Rooms: TR 2b (8:55 AM-10:05 AM)
301 Pricilla Payne Hurd Academic Complex (PPHAC)

Course Description:

Charles Darwin, in his *Origin of Species* (1859), proposed natural selection as a unifying principle to explain two things: the transmutation of species and the adaptation of organisms to their environment. Evolutionary ecology takes the second of these as its field of study. Its aim is to explain how organisms have evolved to become adapted to their environment, including their interactions with members of their own and other species, the biotic environment, as well as the physical environment; it examines the selective pressures imposed by the environment and the evolutionary response to these pressures. The main subfields of evolutionary ecology are life history evolution, sociobiology (the evolution of social behavior), the evolution of interspecific relations (cooperation, predator-prey interactions, parasitism, mutualism), and the evolution of biodiversity and of communities.

In this seminar students will learn to utilize the scientific literature to explore the fundamental theories and recent advances in this field. Students will present the results of their own research into the literature in both written papers and oral presentations. Extensive student participation will be an absolute requirement of the course. This course fulfills the writing intensive (WI) and the capstone senior seminar requirements for biology, environmental science, and environmental policy & economics majors.

Course Objectives: Upon completion of this course students will be able to:

- 1) select and research specific topics in the areas of applied and environmental microbiology using both primary and secondary literature sources
- 2) concisely describe a body of research in abstract form
- 3) construct written outlines and drafts based on feedback from peers and the professor
- 4) write book and research review papers in a proper scientific format
- 5) give concise, well-organized oral presentations to peers

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- 6) clearly discuss and answer questions from their peers about their research findings
- 7) offer valuable, constructive criticism on peers' written and oral work

Texts: Gillen, C.M. 2007. *Reading Primary Literature: A Practical Guide to Evaluating Research Articles in Biology*. Pearson Education, Inc. NY (ISBN: 978-08053-4599-5); pbk).

Pechenik, J.A. 2013. *A Short Guide to Writing About Biology* (8th edition). Pearson Education, Inc., NY (ISBN: 0-321-15981-0; pbk).

Grading: Research Papers	200 points (2 @ 100 points each)
Presentations	200 points (2 @ 100 points each)
Homework/Class Exercises	100 points
CV/Resume Exercise	50 points
Peer Editing	100 points
Class Participation & Attendance	<u>100 points</u>
	750 points

Grading Scale: The grading scale is as follows:

A = 93.0-100%	C = 73.0-76.9%
A- = 90.0-92.9%	C- = 70.0-72.9%
B+ = 87.0-89.9%	D+ = 67.0-69.9%
B = 83.0-86.9%	D = 63.0-66.9%
B- = 80.0-82.9%	D- = 60.0-62.9%
C+ = 77.0-79.9%	F = 59.9% and below

This is what the Student Handbook has to say about grades:

A and A-

These grades are given for achievement of the highest caliber. They reflect independent work, original thinking, and the ability to acquire and effectively use knowledge.

B+, B, and B-

These grades are given for higher than average achievement. Evidence of independent work and original thinking is expected.

C+, C, and C-

These grades are given when the student has devoted a reasonable amount of time, effort, and attention to the work of the course and has satisfied the following criteria: familiarity with the content of the course, familiarity with the methods of study of the course, and active participation in the work of the class.

D+, D, and D-

These grades are given for unsatisfactory work, below the standard expected by the College. They indicate work which in one or more important aspects falls below the

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average expected of students for graduation. The work is, however, sufficient to be credited for graduation, if balanced by superior work in other courses.

F

This grade is given for work that is insufficient to be credited for graduation.

Class Attendance:

It has been my experience that students who do poorly in class generally have numerous absences. In this course it is especially important for you to attend because much of the time we will be hearing from your classmates and it would be in very bad form for you to not show up for them while expecting that they will be there for your presentations. Because of that I will be taking daily attendance.

That said, I understand that sometimes things intervene and make absences unavoidable. Over the course of the semester you can miss one draft-editing session and two presentations (not your own, obviously!) without penalty, provided you have a good reason for missing class. Serious illness is pretty much a minimum for "good" here, and any rescheduling of a missed presentation is entirely at my discretion. If you must miss a class, please let me know in advance if at all possible or immediately thereafter. It's a question of respect, both for me and for your fellow students. In case of any crisis or emergency, or an extended absence from class, you must inform me directly, through Learning Services or the Academic Affairs Office.

Papers:

Each draft you hand in **must** clearly indicate what it is: Who wrote it, when you wrote it, which assignment it is, which draft it is. Be sure to also indicate the word count (see below). All drafts must be word-processed, unless you speak to me first.

In accordance with College policy, it is your responsibility to keep **all** materials (notes, jottings, index cards, intermediate drafts, etc.) for **all** assignments in this course until you receive a final grade. It is especially important that those of you writing with a word-processor be sure to save intermediate drafts *as separate documents!*

There will be two major writing assignments in this course:

Review papers. We'll review the structure of a scientific review article in class, but in short they synthesize a number of papers in a particular area into a coherent and fluid whole. The author may choose to extend the content beyond what is known by adding his or her own speculations, but this isn't a requirement. I want to see a *minimum* of 10 **primary** sources used for these papers. (The notion of a peer-reviewed journal is

absolutely critical: *be certain you understand what is meant by this term!*)

The two papers must be on separate topics, unless you have double the minimum number of

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references. I intend the two presentations to be keyed to these papers, so if you *do* use the same topic for both papers, you're going to have to choose a different topic for one of the talks.

I expect a certain minimum length for each draft:

First Draft	2000 words
Second Draft	2500 words
Final Paper	3000 words

And don't forget to schedule time with the staff at the Writing Center — getting a real outsider's perspective (by which I mean a non-scientist, or one who isn't very familiar with your subject) can be an invaluable asset to your writing.

Presentations:

Each of you will give two oral presentations over the course of the semester. You will also be responsible for evaluating the presentations of your classmates. We'll discuss and develop criteria for evaluating these presentations late in September, but here are a few ground rules:

- Your presentation should take between 15 and 20 minutes, to allow time for questions
- You must provide me an abstract (200-250 words) **one week before** your presentation; I will post this abstract on Blackboard.
- For at least one presentation you must use a software presentation program such as PowerPoint.
- In each presentation you must present experimental results (from one of the papers that you have read, of course — I don't expect you to create them!) in reasonable detail.

Late Assignments:

Late assignments are *very* bad. We're on a tight schedule, and you need to stay on top of the assignments. Anything you hand in late disrupts my schedule as well as the schedules of your classmates. Late assignments will be penalized 10% of the full value for each day (or fraction thereof) that they are late. This also applies to assignments that simply aren't up to snuff: if you hand in two hand-scrawled pages and expect that to count as a draft, you are going to be disappointed!

Reading Assignments:

It is important that you do the reading assigned for any given session in advance. Discussion of the material is a critical part of the course, and if you haven't read that day's material, you're depriving yourself and your classmates of your most informed and considered opinion.

Studying Together:

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Working together is a Good Thing! I encourage you to talk with friends in and out of this course about what you're doing, how effective your writing is, whether the approach you've chosen to take makes sense, whatever. There is no aspect of this course that can't be improved by working with other students on it.

Academic Honesty:

I adhere to the Academic Honesty Policy of the College. If you're not familiar with College policy, you should be. See the Student Handbook for details. Any and all written work must be done in your own words (with the exception of direct quotations which are clearly indicated as such), and written work must include proper citations indicating the sources for any ideas, concepts, facts, or other information derived from others, whether or not you have restated it in your own words. Any cases of suspected cheating or plagiarism will be referred to the Academic Affairs Office. Academic dishonesty may result in a failing grade in the course.

Accommodations:

Per Moravian College policy: "Students who wish to request accommodations in this class for a disability should contact Elaine Mara, Assistant Director of Learning Services for Disability Support, 1307 Main Street (610-861-1510). Accommodations cannot be provided until authorization is received from the office of Learning Services."

Access for Disabled Students:

Our classroom is accessible to students with impaired mobility. I hope that all of you will avail yourselves of the College's Writing Center as well, as part of your process for improving your written work for the course. However, I am required to point out that "the Writing Center is located in a building that is not accessible to persons with mobility impairments. If you need the services of the Writing Center, please call 610-861-1392." If you have any questions about this, please don't hesitate to ask me.

Classroom Expectations:

Respect for others' answers and views.

Disruptive behavior during class will result in your dismissal from the class the first time, after that, disciplinary action will be taken.

Cell phones need to be turned to OFF and put away in a purse or book bag during class. Use of cell phones in any way during class will result in dismissal from class and be counted as an absence.

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Non-alcoholic drinks are allowed in class; food is not.

If you arrive late, be respectful by not disrupting a class already in progress.

These guidelines are intended for the benefit of the students as far as clarification of my expectations for the course; however, in exceptional circumstances I reserve the right to exercise discretion in the application of these guidelines to individual cases or to refer a particular case to the Academic Dean if necessary.

Class Participation:

Beyond your written and oral presentations, I also expect you all to participate in editing your classmates' written drafts and evaluating their presentations. You can see by the point distribution I use for grading that I take these aspects of the course very seriously.

In addition, I expect you to give me evaluations of each talk. We'll discuss the format later in the semester.

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Schedule for BIOL 370/ENVR 370 (Seminar: Evolutionary Ecology) Fall 2013

Date	Topic	Assignment
T Aug. 27	Introduction; Finding & Reading Scientific Papers	Gillen: Section 1 Gillen: Section 2; Questions 1,2 Gillen: Section 3; Questions 1-7
R 29	Career Center Presentation: Amy Saul	Prepare resume (Due 9/10)
T Sept. 03	Applying to Graduate & Professional Schools Discuss Gillen: Sections 1,2,3	Pechenik: Chapters 1,3 & 12 Gillen: Section 4; Questions 1-9 Gillen: Section 5; Questions 1-9
R 05	Using Scientific Databases: Kim Demyan Meet in the Refeence area of Reeves Library	Pechenik: Chapter 2
T 10	Reading Scientific Papers: Introduction & Materials & Methods Discuss Gillen: Sections 4 & 5 Discuss Pechenik: Chapters 1,3, & 12	Gillen: Section 6; Questions 1-7 Gillen: Section 7; Questions 1-10 Gillen: Section 8 Pechenik: Chapter 4
R 12	Reading Scientific papers: Results & Discussion Discuss Gillen: Sections 6,7 & 8	Pechenik: Chapter 7
T 17	Writing Review Papers Discuss Pechenik: Chapter 7 Introduction to Evolutionary Ecology	
R 19	Introduction to Evolutionary Ecology	Pechenik: Chapter 5
T 24	Citing Sources and Listing References Discuss Pechenik: Chapter 5	Pechenik: Chapter 6 & 11
R 26	Revising Papers and Preparing Talks Peer editing session for papers 1-8 Discuss Pechenik: Chapters 6 & 11	
T 01	No class	
R 03	Student Presentations 1, 2 & 3	
T 08	Student Presentations 4, 5 & 6	

R	10	Student Presentations 7 & 8 Peer editing session for papers 9-16
T	15	No class: Fall Break
R	17	Student Presentations 9, 10 & 11
T	22	Student Presentations 12, 13 & 14
R	24	Student Presentations 15 & 16
T	29	Peer editing session for papers 1-8
R	31	Student Presentations 1 & 2
T	Nov. 05	No class
R	07	Student Presentations 3 & 4
T	12	Student Presentations 5 & 6
R	14	Student Presentations 7 & 8
T	19	Peer editing session for papers 9-16
R	21	Student Presentations 9 & 10
T	26	No class: Thanksgiving Break
R	28	No class: Thanksgiving Break
T	Dec. 03	Student Presentations 11 & 12
R	05	Student Presentations 13 & 14
M	09	Student Presentations 15 & 16

All papers are due one week following your presentation.