

EVOLUTION (BIO 4200)
Syllabus, Fall 2019

Credits: 3
Time: T/Th 2:30-3:45
Place: [0146 DRY](#) (deroy-auditorium)

Instructor: Dr. Weilong Hao (haow@wayne.edu)
Biological Sciences Building, room 5107.1
Phone: 313 577 6450

Learning Objectives/Outcomes: As a result of mastering the material in the course, you will be able to:

1. Understand and study the mechanisms underlying the diversification of viruses, microorganisms, and multicellular systems by means of natural selection
2. Infer phylogenetic relationships using structural and genetic data
3. Apply comparative approaches to analyze and study patterns of genetic, organismal and cultural diversification
4. Study adaptive processes using molecular genetic tests
5. Understand the complementary nature of theoretical, modeling, and experimental studies of evolutionary change
6. Understand the role of kinship and reciprocity in the evolution of cooperative behavior
7. Apply game theoretical thinking
7. Understand the evolutionary origin of gender differences
8. Recognize the multiple levels of evolutionary change that affect the human sphere
9. Apply evolutionary insights to the development of biomedical and public policy

Office hour: Will be determined in the first lecture (or by the second lecture)

Credit requirement policy: Note that prerequisite requirements as outlined below will be strictly enforced except for cases of extreme urgency, which will be decided on at the instructor's discretion.

Requirement:

- STUDENTS ARE RESPONSIBLE FOR ALL THE ANNOUNCEMENTS MADE ONLINE AND IN CLASS.

Textbook: **(REQUIRED)**
Evolutionary Analysis, 5/e
Herron & Freeman C2014
ISBN-13: 9780321616678

Exam formats:

- The exams may include various types of questions including multiple choice, fill-in-the-blank, problem solving, and short essays.
- All exams will be closed book and held in class.
- Please bring your own pencils (and pens) and. Please **always bring your university-approved calculator (you are NOT allowed to borrow others' calculator during exams)**
- No electronic devices of any other kind than a calculator will be allowed.
- Cell phones and smart watches must be turned off and put in your bag.
- Anyone who leaves the exam room will not be allowed back in (No exceptions).

- Late-arriving students should know that admittance into the exam room will not be allowed after the first student has left the room or 30-minute into the exam (whichever is earlier). If announcement regarding the exam paper is made at the beginning during the exam, the announcement may not be made again to late-arriving students again (so please arrive on time).
- Scantron forms will be supplied if required. Do not bring your own scantron forms to the exams as you will not be allowed to use them.

Grading:

- Each exam (4 midterms and 1 final) will count for 225 points. The best four exams will be counted towards the final grade.
- The final exam will cover all class materials.
- Class participation and attendance are strongly encouraged but will not be graded.
- There is no extra credit under any circumstances.
- Students with scheduling conflicts for any midterm exam must notify Dr. Hao in writing by class time by September 22, 2019. No make-up exams will be given unless Dr. Hao has been notified in writing by this date.
- Reasonable exceptions will be granted in cases of illness, which will require notification prior to the exam and must be followed up with an original signed note from a physician.

	Regular Students		Honors Students
Midterm Exam 1	225	Midterm Exam 1	225
Midterm Exam 2	225	Midterm Exam 2	225
Midterm Exam 3	225	Midterm Exam 3	225
Final Exam	225	Final Exam	225
Home work/engagement	100	Home work/engagement	100
		Presentation	(Pass/Fail)
	Total: 1000		Total: 1000

Honors option: Students taking the honors classification are required to study assigned reading material and present to the class. Students need to PASS the honors requirement to earn honors credit. Students registered for honors option who failed the honor requirement will receive an "incomplete" regardless of the performance in the exams. Even though the presentation is not graded, honors students are expected to be engaged. See details below:

Honors engagement factor:

Attendance in meetings: (8-10 meetings in addition to the regular classes, details to follow based on enrollments). **No penalty will be given if one meeting is missed. a 2% deduction will be given on (home work/engagement) if two meetings are missed. Missing three meetings will result in a "Fail" in the honors option.**

Engagement in discussions: Students are expected to make intellectual inputs during discussions in each meeting. No intellectual inputs in each meeting will be given 2% deduction on (home work/engagement).

Clicker questions:

- Any clicker-questions given during classes will be counted as bonus points.

No further adjustment for homework points.

The final letter grade will be determined as follows:

Percentage	Final Grade
90.00%- 100%	A

87.00%- <90%	A-
85.00%- <87%	B+
78.00%- <85%	B
75.00%- <78%	B-
73.00%- <75%	C+
65.00%- <73%	C
62.00%- <65%	C-
60.00%- <62%	D+
57.00%- <60%	D
55.00%- <57%	D-
<55%	F

EXAM GRADE DISPUTES / CHALLENGE OPTION

- Students will have one (1) week after the return of an exam or a written assignment to challenge a grade for any question with a written note providing an explanation.
- Failure to challenge the grade within this period indicates a willingness to accept the grade as is. The challenge should consist of a written description of why the answer is correct based on other published material that you cite.

CHEATING

- A strict zero-tolerance policy for cheating will be enforced.
- Anyone caught cheating on an exam will receive a score of 0 (zero) for that portion of the grade.
- Students found to be cheating during an exam (using a “cheat sheet”, looking at another’s paper, or allowing another to look at yours), will receive a zero for that test with no opportunity to drop or replace that score.
- A second episode of cheating will result in a grade of F for the course and may also result in initiation of university disciplinary action.

SPECIAL CONSIDERATIONS FOR INDIVIDUALS WITH DISABILITIES

If you have a documented disability that requires accommodations, you will need to register with Student Disability Services for coordination of your academic accommodations. The Student Disability Services (SDS) office is located at 1600 David Adamany Undergraduate Library in the Student Academic Success Services department. Once you have your accommodations in place, I will be glad to meet with you privately during my office hours to discuss your special needs.

RELIGIOUS HOLIDAY CONFLICTS

- If you have a conflict with any of the scheduled class or exam times due to religious reasons, you must notify Dr. Hao in writing by class time on **September 22, 2019**.
- No make-up exams will be given unless s/he is notified in writing by this date.

UNEXPECTED UNIVERSITY CLOSURES

If the University is officially closed on an exam day, the exam will be held on the next regularly scheduled class day.

OTHER

- I am happy to write letters of recommendations for students who earn a grade of B+ and better.

Tentative lecture schedule (subject to change as class progresses)

The chapters are according to the textbook Evolutionary Analysis by Herron and Freeman 2014.

Thr Aug 29	2:30-3:45	L01	Introduction to Evolution (chapter 1)
Tue Sep 3	2:30-3:45	L02	The Pattern of Evolution (chapter 2)
Thr Sep 5	2:30-3:45	L03	Evolution by Natural Selection (chapter 3)
Tue Sep 10	2:30-3:45	L04	Estimating Evolutionary trees 1 (chpt 4)
<u>Thr</u> Sep 12	2:30-3:45	L05	Estimating Evolutionary trees 2 (chpt 4)
Tue Sep 17	2:30-3:45	-	Midterm exam 1
<u>Thr</u> Sep 19	2:30-3:45	L06	Variation Among Individuals (chapter 5)
Tue Sep 24	2:30-3:45	L07	Selection and Mutation (chapter 6)
<u>Thr</u> Sep 26	2:30-3:45	L08	Migration, Drift, and Nonrandom Mating (chpt 7)
Tue Oct 1	2:30-3:45	L09	Linkage and Sex (chapter 8)
<u>Thr</u> Oct 3	2:30-3:45	L10	Studying Adaptation (chapter 10)
Tue Oct 8	2:30-3:45	-	Midterm exam 2
<u>Thr</u> Oct 10	2:30-3:45	L11	Sexual Selection (chapter 11)
Tue Oct 15	2:30-3:45	L12	Evolution of Social Behavior (chpt 12)
<u>Thr</u> Oct 17	2:30-3:45	L13	Aging and Life-History Characters (chpt13)
Tue Oct 22	2:30-3:45	L14	Evolution and Human Health (chapter 14)
<u>Thr</u> Oct 24	2:30-3:45	L15	Genome Evolution and Molecular Basis (chpt 15)
Tue Oct 29	2:30-3:45	-	Midterm exam 3
<u>Thr</u> Oct 31	2:30-3:45	L16	Origins of Life (chapter 17)
Tue Nov 5	2:30-3:45	L17	Speciation (chapter 16)
<u>Thr</u> Nov 7	2:30-3:45	L18	Evolution and Development (chapter 19)
Tue Nov 12	2:30-3:45	L19	Human Evolution (chapter 20)
Thr Nov 14	2:30-3:45	-	Honors student presentations
Tue Nov 19	2:30-3:45	-	Honors student presentations
Thr Nov 21	2:30-3:45	-	Honors student presentations
Tue Nov 26	2:30-3:45	-	Honors student presentations
Thr Nov 28			Thanksgiving ! (no class)
Tue Dec 3	2:30-3:45	-	Midterm exam 4
Thr Dec 5	2:30-3:45	-	Review
Thr Dec 12	<u>2:45-4:45</u>	-	Final Exam