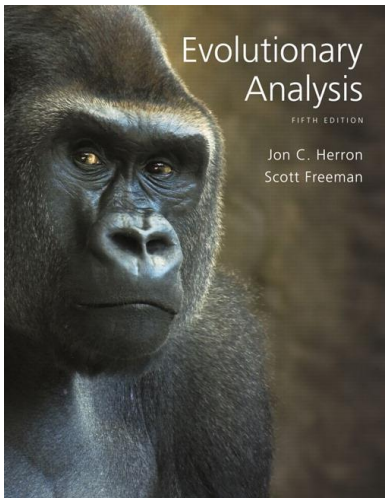
# BIO315 Evolution - Syllabus, Fall 2015

**"Nothing in biology makes sense except in the light of evolution." *-T. Dobzhansky***

**Instructor:** Dr. Katherine (Katy) Greenwald **Email:** katherine.greenwald@emich.edu

**Organizational details:** I will be teaching two sections of Evolution this semester:
CRN **12798**: Class occurs M/W 9:30 AM – 10:45 PM in 575 Mark Jefferson Science Complex.
CRN **12799**: Class occurs M/W 2:00 PM – 3:15 PM in 173 Mark Jefferson Science Complex.
Office hours for both sections are M 11-1 PM and T 9-11 AM and by appointment in MJ 401-N.

**Course Objectives:** The overall goal of this course is to enable you to understand the history, mechanisms, and implications of biological evolution. As with any introduction to a broad area of thought, we will have to spend a certain amount of time "covering the basics." However, I also think it is very important to expose students to the exciting recent advances in the field, and its relevance to numerous other areas of study (e.g., medicine, agriculture, conservation, etc.).




Toward this end, class time will be split between lectures, activities, and discussion of scientific literature. I aim for a dynamic classroom atmosphere where lectures are participatory, and questions, discussion, and collaboration are strongly encouraged.

**Text:** Evolutionary Analysis (5th Edition); J. C. Herron & S. Freeman
*Other readings (primary literature) will be made available on the course website at **canvas.emich.edu**.*

**Grading procedures:**

| Grading Item | Points |
|---|---|
| Evolutionary Tree Workshop Day | 50 |
| Population Genetics Workshop Day | 50 |
| Kin Selection Workshop Day | 50 |
| Speciation Workshop Day | 50 |
| EIA Bibliography | 50 |
| Quizzes (4 @ 30 pts each) | 120 |
| Midterm exam | 150 |
| Final exam | 180 |
| In-Class Points/Participation | 100 |
| **TOTAL** | **800** |

*More information on each assignment will be provided on Canvas.*

| Percentage | Grade |
|---|---|
| 93-100% | **A** |
| 90-92% | **A–** |
| 87-89% | **B+** |
| 83-86% | **B** |
| 80-82% | **B–** |
| 77-79% | **C+** |
| 73-76% | **C** |
| 70-72% | **C–** |
| 67-69% | **D+** |
| 63-66% | **D** |
| 60-62% | **D–** |
| <60% | **F** |

**Grading Procedures (continued):** Grades will be based on the items above. Final grades may be adjusted based on relative performance, but students with a composite score equaling or exceeding 90, 80, or 70% can expect to receive a grade no lower than A-, B-, or C- respectively.

Homework assignments/problem sets must be turned in **hard copy** at the start of class on the due date. Grade appeals must be made in writing and turned in within one week of receiving the graded assignment.

**Policy on attendance and late assignments:** You are, of course, strongly encouraged to attend class. You can earn up to 100 points for in-class problems, as well as good attendance (≤ 3 unexcused absences) and consistent participation throughout the semester.

There is a 10% per day penalty for homework assignments turned in late. **Points for in-class exercises are only available the day of the exercise, and may not be made up if missed.** Exams may only be made up with a valid, documented excuse (e.g., illness, bereavement) and may be significantly different (read: harder) than the original version.

*Additional readings may be assigned as the semester progresses. Class schedules, exam dates, and policies are subject to change.* ***Students are responsible for changes announced in class.***

**Email policy:** Email is a primary official mode of communication; students are expected to check it daily. Emails sent to a student's university address are considered delivered and read, and students are responsible for the content of those emails.

**Statement on disability:** I will gladly attempt to accommodate any student who may have special needs or concerns. Any student who may need accommodations for the effects of a disability should contact me to discuss specific needs. For support services, please contact the Students with Disabilities Office (734-487-2470; http://www.emich.edu/disabilities/index.html).

**Statement on diversity:** I am committed to the goals of creating a welcoming climate for all students and promoting a shared, inclusive understanding of diversity. If you have any concerns about diversity-related issues, please contact the instructor or the Office of Diversity and Affirmative Action (734-487-1166; http://www.emich.edu/diversity/).

**Statement on academic integrity:** Academic dishonesty is defined as the attempt to secure unfair advantage for oneself or another in any academic exercise. The University's Code of Student Conduct outlines three examples of academic misconduct: cheating, falsification, and plagiarism. ***Ignorance of the University's Code of Student Conduct is never considered an "excuse" for academic misconduct.***

You will find that this course offers ample opportunity for collaboration and that joint efforts will often be encouraged. However, certain assignments will require that you do your OWN work. If you have any question as to whether your level of cooperation with your peers (or the similarity of your work to that of others) is acceptable, you must contact the instructor to discuss the matter BEFORE handing in the assignment. ***Academic misconduct will result in failure of the course.***

## *Class Schedule*

| Date | Topic | Reading |
|---|---|---|
| | | |
| W 9/9 | Introduction to Evolutionary Thinking | EA* Ch. 2 |
| M 9/14 | Darwinian Natural Selection | EA Ch. 3 |
| W 9/16 | Darwinian Natural Selection | EA Ch. 3<br>Desrochers 2010 |
| M 9/21 | **Evolutionary Tree Workshop Day** | EA Ch. 4 |
| W 9/23 | **QUIZ 1**; Mutation and Genetic Variation | EA Ch. 5, 15 |
| M 9/28 | Mendelian Genetics in Populations I | EA Ch. 6 |
| W 9/30 | Mendelian Genetics in Populations II | EA Ch. 7 |
| M 10/5 | Mendelian Genetics in Populations II, continued | EA Ch. 7 |
| W 10/7 | **Pop Gen Workshop Day** | |
| M 10/12 | **QUIZ 2**; Development and Evolution | EA Ch. 19 |
| W 10/14 | Evolution at Multiple Loci: Linkage and Sex | EA Ch. 8 |
| M 10/19 | Evolution at Multiple Loci: Quantitative Genetics | EA Ch. 9 |
| W 10/21 | **MIDTERM EXAM** | |
| M 10/26 | Studying Adaptation: Evolutionary Analysis of Form and Function | EA Ch. 10 |
| W 10/28 | Sexual Selection | EA Ch. 11<br>Wedekind et al. 1995 |
| M 11/2 | **EIA Bibliography Due;** Kin Selection and Social Behavior | EA Ch. 12 |
| W 11/4 | **Sexual/Kin Selection Workshop Day** | |
| M 11/9 | Aging and Other Life History Characteristics | EA Ch. 13 |
| W 11/11 | Evolution and Human Health | EA Ch. 14 |
| M 11/16 | **QUIZ 3**; Speciation, Stasis & Extinction | EA Ch. 16 |
| W 11/18 | Speciation, Stasis & Extinction | EA Ch. 16 |
| M 11/23 | **Speciation Workshop Day** | |
| W 11/25 | **No Class - Thanksgiving Break** | |
| M 11/30 | Precambrian Evolution | EA Ch. 17 |
| W 12/2 | Cambrian Explosion and Beyond | EA Ch. 18 |
| M 12/7 | **QUIZ 4**; Human Evolution | EA Ch. 20 |
| W 12/9 | Human Evolution | EA Ch. 20<br>Zerjal et al. 2003 |
| M 12/14 | **FINAL EXAM** | |
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*EA = Evolutionary Analysis, 5th Edition. Other readings will be available on EMU-Online.