**Biology 380 – Evolution**

**Professor:** Dave Anderson, 15E Klamath or 322 Pacific. danderso@uoregon.edu. 6-1537. Office hours: W, F: 10:00AM – 11:00AM in 15E Klamath or by appointment.

**GTF:** Rudy Borowczak, Onyx 360, rborowcz@uoregon.edu, Office hours: R: 10:00AM – 11:00AM in Onyx 360.

**Lectures:** M, W, F, 9-10AM (all sections) in 115 Lawrence.

**Discussion Sections:** T, 9-10AM (sec. 1), 10-11AM (sec. 2), 11AM-Noon (sec. 3) in 111 Huestis.


**Blackboard:** Many course materials, such as the course syllabus and the powerpoint slides from lecture, will be available through blackboard, accessible using your individual login account.

**Course Description:** This is a third-year course in evolutionary biology. Its purpose is to provide a fundamental understanding of the mechanisms and dynamics by which evolution produces gradual change in biological species, traits, functions, systems, etc. We will focus on the major concepts, ideas, and findings that have come from a century and a half of evolutionary study.

**Readings:** Most reading will be from the main textbook. Additionally, you will be responsible for reading one paper from the primary literature each week for discussion in your discussion sections. These will be emailed to you in advance of each discussion session.

**Expectations:** You will be expected to demonstrate your understanding of the main principles and findings of evolutionary biology. You will be evaluated through your participation in discussion sections (25%), a mid-term exam (30%), and a final exam (45%). The best way to ensure your success is to stay on top of the readings, to attend all lectures, and to be an active participant (particularly in discussion sections). If you find yourself stuck, or having trouble with some part of the course material, please bring it up either in class, discussion section, or at office hours. The material covered by the course builds upon what came before, so please don't let things fester; if you are having trouble, be proactive about getting yourself where you need to be with the material.

**Schedule:**

**Week 1** – What is Evolution? What are its basic tenets? How did Darwin and Wallace originally conceive of it?

Reading: Chapters 1-2
Week 2 – What is the evidence for evolution in the fossil record? What does evolution tell us about the history of life on Earth?
Reading: Chapters 3-4

Week 3 – How does evolution work? What is the role of natural selection, and what is the role of random chance in determining how species evolve and change?
Reading: Chapters 5-6

Week 4 – Connecting theory to the field. How does evolution play out in real organisms?
Reading: Chapters 7-8

Week 5 – Understanding the historical relationships between species using phylogenetics.
Reading: Chapter 9

MIDTERM on Friday May 1 (covering Chapters 1-9)

Week 6 – What does adaptation mean? How does it happen? What is the role of sexual vs. asexual reproduction?
Reading: Chapter 10-11

Week 7 – How does the lifestyle of an organism influence how it evolves? How are new species formed?
Reading: Chapter 12-13

Week 8 – What large patterns can we see through evolutionary history? How do interacting species evolve with one another?
Reading: Chapter 14-15

Week 9 – How have social systems evolved? What do we know about human evolution?
Reading: Chapter 16-17

Week 10 – How does our understanding of evolution impact the way we treat diseases?
Reading: Chapter 18