EVOLUTION: Biology-351 Spring 2017
Lisa A. Dorn PhD

TEXT: Stearns, S. C., and R. F. Hoekstra. 2009. Evolution: an introduction. 3rd edition. Oxford University Press, London, UK. REQUIRED.

OFFICE HOURS (room HS-45, phone 424-3064) TBD.

Evolution is the guiding principle behind all of Biology and yet many people even Biologists have flawed or incomplete knowledge about how it works and why it is important. In this class, you should always keep in mind what the study of evolution can and cannot address and beware extrapolating beyond the questions experiments were designed to answer. We live in a time when scientific facts are simply ignored or falsely refuted by people with agendas. Evolution is at the top of the list of denial. It will be your job to defend science but you cannot do that without knowledge of what you are defending.

GRADING

ORAL PRESENTATIONS:

In this course, we will meet for 14 two-hour sessions. We will divide the class into 6 groups of ~4 students each. Your group will be responsible for **two** ~1 ½ hour presentations of the material in the textbook assigned for that week (details below). Each presentation is worth **100 pts** (don't worry each student will be graded separately).
***Students not presenting are encouraged to ask questions and contribute to a discussion*.** See writing assignments below for why this is important.

WRITING ASSIGNMENTS:

After each presentation, if you are not a presenter that week, you will write a paragraph about something presented that day. I will choose the question for you to answer or figure for you to describe. Each of these paragraphs is worth **10 pts.**
I am looking for effort and a reasonable answer. If you do not understand the topic or figure well enough to write something reasonable, it means you failed to ask questions during the presentation or you didn't read the textbook.

Assignment	Points	Total Points
Oral presentations (2)	100 pts each	200
Writing (10)	10 pts each	100
Total Points		**300**

GRADING SCALE:
A = 93 - 100%,
A- = 90 - 92.9%
B+ = 88 - 89.9%
B = 83 – 87.9%
B- = 80 - 82.9%
C+ = 78 - 79.9%
C = 73 - 77.9%
C- = 70 – 72.9%
D+ = 68 – 69.9%
D = 63 - 67.9%
D- = 60 - 62.9%
F (Failure) < 60%

RULES FOR ORAL PRESENTATIONS

We will divide all students into groups of ~4 students each.

- Each member of the group has approximately 15 to 20 minutes to present a portion of the information.
- Each group will assign members to a specific part of the material in chunks. Figure out who will talk first, who talks second, third etc. ***Do not swap back and forth and do not give the bulk of the material to one studen***t. Remember, you are all graded separately; it doesn't matter to your grade if one of your members is incompetent. I have been doing this a long time and I've got excellent BS and effort radar. I can tell who is getting it done and who's just slacking. If you can't figure something out with reasonable effort it's allright to say so and then we have an opportunity to brainstorm as a class. Remember, if you're having trouble the rest of the class is too.

- I will provide you with a power point presentation that includes all of the figures from the chapter you are presenting. It will then be up to the 4 group members to divvy those figures up. You do not all have to have a figure to present, if that's the way it works out, but you can also make additional figures if you think they help you.

- You should think carefully about which topics you want to present. You will have to choose two topics. I will then assign students to groups based on their choices as much as possible. You will give two presentations over the course of the semester, one before spring break and one after spring break. You may end up with different group members during the second round.

CLASSROOM FORMAT:

When the presentation is done, the presenters are free to go. The rest of the class will take a 10 minute break.

After the break, non-presenters have 10 minutes to write a summary about a figure presented that day or address a question. I will choose the figure and/or question each week.

Then everyone may leave except the next group of presenters who will have ~30 minutes to get help from me and convince me they are in good shape for the next weeks presentation.

HOW TO GET A GOOD GRADE:

Oral presentations are often difficult for undergraduates but it is not my intention to give you opportunities to humiliate yourself nor do I expect you to be super-polished. This is not a communications class. I'm not grading you on your presentation skills perse, but I will expect you to follow some basic formatting and presentation rules (see below). In my experience, really bad presentations that do not adhere to the rules I outline below reflect both lack of knowledge and lack of preparation. Meaning, that if you know what you're talking about you'll be allright.

Presentation Expectations

1. **Don't re-write the textbook in your slides.** This is a guaranteed low grade. Depending on the topic, each paragraph warrants 1 to 2 slides. Read the paragraph then summarize the main point in short bullet points that you will expand on with your voice and/or images.

2. **Use informative titles**. All titles consisting of 1 word will result in a **10 point deduction**. Again, read the paragraph and use the title to convey the most important point of that paragraph. Sometimes, each paragraph is providing the evidence for the subsections main point. In that case maybe you should use the subsections main point as your title for every slide.

3. **Point to data in a figure.** When presenting a figure, first describe the figure then use your finger to point to important data points illustrating the point of the figure. DO NOT USE "FIGURE 5.2" or something like that as your title. The title should imply what the figure means.

Lec #	**Day**	**Date**	**Topics**	Book Readings	**Week**
1	Wed	**30-Jan**	Syllabus, grading, course overview		**1**
2	Wed	**6-Feb**	Introduction; Adaptive & Neutral Evolution	Chapters 1, 2 & 3(pp. 7-53)	2
3	Wed	**13-Feb**	The genetic impact of selection on populations	Chapter 4 (pp. 70-98)	3
4	Wed	**20-Feb**	The origin and maintenance of genetic variation	Chapter 5 (pp. 99-123)	4
5	Wed	**27-Feb**	Development	Chapter 6 (pp. 123-151)	5
6	Wed	**6-Mar**	The expression of variation	Chapter 7 (pp. 152-173)	6
7	Wed	**13-Mar**	Life histories	Chapter 10 (pp214-238)	7
	Wed	**20-Mar**	**Spring Break**		
8	Wed	**27-Mar**	Speciation	Chapter 12 (pp. 277-302)	8
9	Wed	**3-Apr**	Phylogeny and systematics	Chapter 13 (pp. 303-330)	9
10	Wed	**10-Apr**	Key events in evolution	Chapter 15 (pp. 355-374)	10
11	Wed	**17-Apr**	Major events in the geological theater;	Chapter 16 (pp. 375-401)	11
12	Wed	**24-Apr**	The fossil record and life's history	Chapter 17 (pp 403-435)	12
13	Wed	**1-May**	Coevolution	Chapter 18 (pp 443-479)	13
14	Wed	**8-May**	Human evolution and evolutionary medicine; Overall summary	Chapter 19 (pp. 480-495); Chapter 20 (pp 496-504)	14