

BIOLOGY 432 EVOLUTIONARY BIOLOGY**Spring 2013**

Instructor: Craig L. Moyer
Email: cmoyer@hydro.biol.wvu.edu
Office Hours: MWF, Noon to 1:00pm & by appointment, BI 406

Class Meetings: **Lecture – MW, 10:00am till 11:20am, AW 303**
 Recitation – F, 10:00am - 11:20am, AW 303

Lecture Text – *Evolution, Making Sense of Life*; 2013, Zimmer & Emlen, Roberts & Co Publishers. **Discussion Book** – *Spillover: Animal Infections and the Next Human Pandemic*; 2012, David Quammen, W. W. Norton & Co.

Note: Updated information & reading assignments to be posted on the class web site:
<http://fire.biol.wvu.edu/cmoyer/cmoyer.courses.html>

Tentative Class Schedule: (As of 05/28/2013)

		<u>Text Readings</u>
Week 1	Apr 03 W Overview & Organizational 05 F Darwinism and the Fact of Evolution <i>Sign Up & Scheduling Presentations</i>	Chap 1 & 2
Week 2	Apr 08 M Darwinism and the Fact of Evolution 10 W Tree of Life: Phylogeny ≠ Taxonomy 12 F Tree of Life: Phylogeny ≠ Taxonomy <i>Turn in Title & Topic paragraph for term papers</i>	Chap 2 Chap 4 Chap 4
Week 3	Apr 15 M Patterns of Evolution: Novelty 17 W The Fossil Record 19 F <i>Discussion Group 1</i>	Chap 9 Chap 3
Week 4	Apr 22 M The Fossil Record 24 W Origins of Life & Cambrian Explosion 26 F <i>Discussion Group 2</i>	Chap 3
Week 5	Apr 29 M Molecular Evolution & Variation <i>(W.I. Term Paper Outline Deadline)</i> May 01 W Molecular Evolution & Variation 03 F <i>Discussion Group 3</i>	Chap 9 Review Chap 5

Week 6	May 06 M Midterm	
	08 W Population Genetics & Drift	Chap 6
	10 F <i>Discussion Group 4</i>	
Week 7	13 M Quantitative Genetics	Chap 7
	<i>(W.I. Term Paper First Draft Hand In/Out for Review)</i>	
	15 W Quantitative Genetics	
	17 F <i>Discussion Group 5</i>	
Week 8	20 M Population Genetics & Drift (continued)	
	<i>(Return W.I. Draft Reviews Deadline)</i>	
	22 W Mechanisms of Speciation	Chap 13
	24 F <i>Discussion Group 6</i>	
Week 9	27 M Memorial Day Holiday	
	29 W <i>Discussion Group 7A</i>	
	<i>(W.I. Term Paper Second Draft Deadline)</i>	
	31 F <i>Discussion Group 7B</i>	
	<i>(Return W.I. Second Draft Reviews)</i>	
Week 10	Jun 03 M Extinction Events	Chap 14
	05 W Human Evolution	Chap 17
	07 F Finish Up & Review Session	
	<i>(Term Paper Final Draft Deadline for ALL)</i>	

Final Exam: Thursday, June 13th @ 10:30am till 12:30pm

Course Evaluation and Grading:

Midterm Exam	150 points
Final Exam	200 points
Discussion Presentation	50 points
Participation	50 points
<u>Term Paper</u>	<u>50 points</u>
Total points possible:	500 points

Course Expectations:

Every student will be expected to undertake a project that will include leading a group discussion **AND** producing a **term paper** on an evolutionary biology related topic of interest agreed upon by student and instructor ahead of time. The “basic term paper” option is expected to have 5 - 7 pages with standardized references from primary scientific literature (no websites!). All writing assignments should be double spaced, with minimal spelling errors and using proper grammatical structure. Fonts should be size 12. Times New Roman font is preferred.

Those students who option to take this course as **writing intensive** will make special arrangements with the instructor to produce an expanded term paper. You will be expected to produce an outline and a minimum of two iterations of complete drafts. These will be returned with comments prior to gaining final approval of your term paper, so make sure to budget your time (and mine!) accordingly. This expanded term paper is expected to have 9 - 10 pages with standardized references. See suggested **target draft due dates** for when you should expect to be turning in your term paper for comments. In addition, *another* written summary based on a supplemental reading assignment from class is also **required**. This written summary will be ~2 pages in length. Finally, you will be expected to **critically examine and evaluate** another student’s “first draft term paper,” acting as their editor, then I will assess both your first draft and your editorial comments.

The **discussion presentation** will consist of: (1) Signing-up for a topic from the assigned chapter readings in *Spillover*. We may also use papers from the primary scientific literature to fill out the available time slots as the basis for your presentation. These papers will be prearranged by the instructor so copies can be distributed to the class prior to your presentation. (2) Preparing a 15 minute oral presentation with an extra 5 to 10 minutes for discussions. (3) Presentation of figures and tables, to illustrate and outline your discussion. You should take advantage of the multimedia available in our classroom. Use of Powerpoint presentations are encouraged. We will facilitate three to four student presents per discussion period.

Course Objectives: The BIG Picture

This course aims to review critically the facts and theory of evolution. Students are exposed to case studies and current debates. The aim is to encourage students to integrate much of the factual information they have obtained from previous courses, and have them think critically about evolution. Students are encouraged to listen, think and discuss, rather than try to simply gain more facts for memorization and regurgitation. The course is organized to provide an overall synthesis and summary, and aims to provide a very different type of course in what is presumably the last year as an undergraduate.