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# LIFE SCIENCES 15

## LIFE: CONCEPTS AND ISSUES



FALL 2008

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*lecture meets:* Tuesdays and Thursdays, 11am - 12:15pm, LaKretz 110

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## REQUIRED READINGS

*Mean Genes* by Terry Burnham and Jay Phelan. Penguin Books. (*mg*)

*Essential Biology with Physiology, 2<sup>nd</sup> Edition*, by Campbell, Reece, & Simon. (*eb*)

## COURSE REQUIREMENTS

154 • **Section**

Weekly quiz (taken from the problem set; 8 quizzes @ 12pts each; lowest score dropped = 84 pts total), Debate (40 pts), Participation (30 pts)

150 • **Midterm Exam**

200 • **Final Exam** (comprehensive)

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504 • **Total Points Possible**

## EXAMS

There are two exams in this class, one midterm and one final. The midterm is given in class on Thursday of week 4 (October 23<sup>rd</sup>). It will cover material from the lectures and readings through Tuesday, October 21<sup>st</sup> and discussion section material through Week 3. The exam will include multiple-choice and short-answer questions. The final exam is comprehensive but will emphasize material covered after the midterm.

Makeup exams and quizzes are not given. If you are unable to take an examination or have an illness or other emergency, you are responsible for contacting the Life Science Core Office (LS Building, Room 2305, 825-6614) before the examination. You are required to have written verification regarding the illness or emergency. If you feel that an error was made in the grading of your exam, submit your exam with a typed, detailed explanation of the error to the Life Sciences Core Office by Friday of the week following the exam.

## THE LIFE SCIENCES CORE OFFICE

For any administrative and scheduling problems relating to this course, please go to the Life Sciences Core Office in Life Sci. Bldg., room 2305, 825-6614.

## DISCUSSION SECTION AND PROBLEM SETS

Each week there will be a problem set distributed during class. This will include a brief discussion of a topic with some short answer problems. You will not turn in your answers to the problem set but they will be useful in helping you prepare for the exams and the weekly quizzes.

Discussion section meets once a week for two hours. At the beginning of section, there will be a quiz. This quiz will be one of the problems from the problem set (possibly in a *very* slightly altered form). Missed quizzes cannot be made up. No exceptions.

In five of the section meetings there also will be a debate. You will take part directly in one debate during the quarter. During the first week of discussion section, your TA will give you more details on the logistics of the debates.

WEEK	DATE	DISCUSSION SECTION TOPIC / PROBLEM SET
1	Sept./Oct. 29-3	Science as a way of figuring things out ( <i>no problem set, no quiz</i> )
2	Oct. 6-10	Natural selection ( <i>PSet 1</i> )
3	Oct. 13-17	Genes and DNA ( <i>PSet 2</i> ) <i>Debate topic:</i> Genetic screening for all known diseases should be mandatory.
4	Oct. 20-24	Kin selection ( <i>PSet 3</i> ) <i>Debate topic:</i> Cultural, not genetic, causes are the basis of human conflict.
5	Oct. 27-31	The chemistry of living things ( <i>PSet 4</i> ) <i>Debate:</i> We should improve the quality of the human genome as much as possible.
6	Nov. 3-7	Nutrition and health ( <i>PSet 5</i> ) <i>Debate topic:</i> Human sexual behavior is largely determined by evolution.
7	Nov. 10-14	The biology of gender differences ( <i>PSet 6</i> ) <i>Those with discussion sections on Tuesday must attend a Wednesday or Thursday section.</i>
8	Nov. 17-21	Brain functioning ( <i>PSet 7</i> ) <i>Debate topic:</i> Technology has been more of a detriment than a benefit to society.
9	Nov. 24-28	Thanksgiving - ( <i>no problem set, no section meeting</i> )
10	Dec. 1-5	Industrial societies ( <i>PSet 8</i> )

## LECTURE SCHEDULE FOR LS15

WEEK/READING	DATE	LECTURE TOPIC
0 <i>eb: 1</i>	Sept. 25    Th	1. Science as a religion
1 <i>mg: 1; eb: 13</i>	Sept. 30    T Oct. 2      Th	2. Darwin's dangerous idea 3. Nurturing nature: the power of culture
2 <i>eb: 8,9</i> <i>eb: 12</i>	Oct. 7      T Oct. 9      Th	4. What did Mendel discover? 5. Modern genetics and biotechnology
3 <i>mg: 10,11</i>	Oct. 14     T Oct. 16     Th	6. Kindness to our kin 7. Friend and foe are fluid categories
4	Oct. 21     T Oct. 23     Th	8. Unexpected conflict, unexpected cooperation 9. <b>Exam</b>
5 <i>mg: 2,3; eb: 3</i>	Oct. 28     T Oct. 30     Th	10. Proteins, carbs, and fats: the molecules of life 11. Extracting fuel from food: digestion
6 <i>eb: 22</i> <i>mg: 7; eb: 25</i>	Nov. 4      T Nov. 6      Th	12. Nutrition and health 13. The trouble with testosterone: hormones and sex differences
7 <i>mg: 8,9; eb: 26</i>	Nov. 11     T Nov. 13     Th	<b>Veteran's Day - Holiday</b> 14. Eggs are big, sperm are small, and men are dogs
8 <i>mg: 4</i>	Nov. 18     T Nov. 20     Th	15. Polygamy and monogamy among the animals 16. Neurons, brains, and our connection to the external world
9 <i>eb: 27</i>	Nov. 25     T Nov. 27     Th	17. Why are drugs so good? Caffeine: a case study <b>Thanksgiving - Holiday</b>
10 <i>mg: 5,6</i> <i>mg:12</i>	Dec. 2      T Dec. 4      Th	18. Flourishing in our alien, industrial environment 19. Culture at its best? Technology's influence on our biology

**Thursday, December 11**

**Final Examination**

**3 - 6pm**