

## Zoology/Botany 3333 Syllabus Spring 2006

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Office Hours: 208 Richards Hall (any change in location will be posted by the door)  
Monday, 2:00-4:00  
Tuesday, 9:00-10:00, 2:00-4:00  
Thursday, 9:00-10:00  
or by appointment

Office Hour Discussions: Most Office Hours, especially before an examination, may be active with several people having questions about examination material. These will be "open door office hours" and you are invited to join in the office discussion. If you have a more confidential issue to discuss at such times, I request that you make an appointment to talk with me individually. There will be review sessions planned before examinations if the Office Hours are not compatible with your schedule for routine questions.

Text: Hartwell, L.H., L. Hood, M.L. Goldberg, A.E. Reynolds, L.M. Silver, and R.C. Veres.  
2004. *Genetics: From Genes to Genomes*. McGraw Hill, Boston.  
You will also have access to: Thompson, James N., jr., Jenna J. Hellack, Gerald Braver, and David S. Durica. 1997. *Primer of Genetic Analysis*, Second Edition. Cambridge Univ. Press, Cambridge, England.

### Important Dates:

Exam #1 - 10 February (Friday)  
Exam #2 - 8 March (Wednesday)  
Exam #3 - 7 April (Friday)  
Paper Due - 17 April (Monday)  
Exam #4 - 28 April (Friday)  
Final Exam - For section 001 (= the 10:30 am section)  
Final Exam is on Thursday, 11 May, from 8:00 am to 10:00  
For section 002 (= the 8:30 am section)  
Final Exam is on Thursday, 11 May, from 10:30 am to 12:30

Last day to withdraw without petition to the Dean: 31 March 2006.

### Notes:

1. Any student wishing to withdraw after the first two exams and before 31 March can do so with a "W", no matter what grade was earned on examinations. Grades recorded for

withdrawal petitions after that date will, however, accurately reflect the work done on all examinations taken. After 31 March, a student with an “F” would withdraw with a grade of “F”.

2. The mid-term grades submitted to the College of Arts and Sciences will be based upon the results of regular examinations and will not include a "curve". The final semester grades, on the other hand, will include adjustments (that is, a "curve") based in part on each student's overall improved performance during the semester (*e.g.*, improvement during the semester, especially on the final examination). Since such improved performance on the final examination is not known until the final examination is taken, please do not ask what the overall semester “curve” will be until the semester is over and grades are calculated.

3. Guidelines for the class paper (written critique of a defined topic) will be distributed in class early in the semester so you have control over when you complete that assignment. I am certain everyone will review the guidelines for format, citation, and references. It will be important to follow these simple guidelines accurately; that is part of the educational goal.

4. I will be happy to discuss your individual performance, study techniques, or other questions at any time during the semester. Please bring your examinations and class notes, so we can review these together.

Grading:	<b><u>4 one-hour examinations</u></b> at 75 points each	300
	<b><u>in-class activities</u></b> (8 will be offered at unannounced times; ID will be required. These are intended to assist your success on examinations. Grading is 10 for participating, 0 for absence. Maximum credit is 50 points.)	50
	<b><u>paper</u></b> (topic options will be distributed in class)	50
	<b><u>comprehensive final examination</u></b>	<u>150</u>
	Total Points:	550

Normally, 90-100% = A; 80-89% = B, and so forth, though as noted above I reserve the option of lowering these breakpoints (that is, making adjustments in the distribution in your favor) to reward good efforts during the semester. Your individual performance on the final examination will be especially important in those instances in which your grade is near a borderline; marked improvement during the semester will encourage me to award you the higher grade in such cases.

Optional review sessions will be organized before each examination and at other times that can be arranged in response to a class request.

**You must take the examination as scheduled for the section in which you are enrolled.** Examinations will be taken on “scan-tron” sheets with a back page for written answers. Each exam will, therefore, have both scan-tron-graded and written questions. You are encouraged to use the printed test paper to work out answers in case there is a question about how a particular question is interpreted. Both the test paper and the scan-tron sheet must be turned in at the end of each examination. Cases of mis-matched test papers and scan-tron sheets will be considered serious breeches of test security. A key to each hourly (but not final) examination will be provided at the end of the exam day at a location to be announced in class.

Unless special arrangements are made well in advance, any examinations missed for legitimate reasons will be prorated, based upon the average of your other examinations, at the end of the semester. In other words, for each examination missed for an approved reason, your final percentage will be based only upon the examinations you actually took. A grade of zero will be given for missed examinations without an approved excuse. As usual for missed examinations in this department, a note from a doctor, RA, or some other appropriate written excuse will be needed for the grade file. For occasional events, such as travel for University business, an early "Make-up" examination can be scheduled if arranged well in advance of the trip. Since the exam key will be provided publicly on the day of the exam, late "Make-up" examinations will never be given. Arrangements for an early Make-up must be approved at least two weeks in advance. By College and University policy, the final examination must be taken at the time published in the class bulletin for your enrolled section.

Each student should be aware of the University regulations in regard to cheating on class examinations or other work, including plagiarism on written work. Any instance of cheating will be dealt with seriously, under the guidelines set out by the University. I sincerely trust that this will not be necessary.

Any student in this course who has a disability that may prevent him or her from fully demonstrating his or her abilities should contact me personally as soon as possible so we can discuss accommodations necessary to ensure full participation and facilitate your educational opportunities.

Final exam answer keys will not be provided. Final grades will not be posted, but you can have your grade mailed to you if you provide me with a stamped, self-addressed envelope at the final examination period. No grades will be provided by telephone or by email to protect your privacy, since I will not know if you are really the one calling or emailing. Thank you.

# Genetics

ZOO/BOT 3333

Spring 2006

## Lecture Topic Outline

Text = Hartwell, *et al.*, *Genetics: From Genes to Genomes*

Primer = Thompson *et al.*, *Primer of Genetic Analysis: A Problems Approach*

**Note:** The following topic outline indicates text chapters and *Primer* problem manual chapters, but for many topics only selected material will be emphasized. This will be explained in class. A course should encourage you to learn the subject, not just study the instructor's choice of topics for an exam. I, therefore, encourage you to begin by skim-reading each chapter. Then, by seeing the material I include in my lecture presentations, it should be clear in class what specific material you will be expected to know in detail for an examination.

I have found that some students have difficulty because they do not read carefully or stumble over elementary school math (*e.g.*, have difficulty in multiplying fractions like  $1/8 \times 2/3$ , or converting a fraction to a decimal). Errors will lose points on an exam. But even more important, this kind of problem can ultimately block one from achieving one's career ambitions by showing poor results on key steps like the Graduate Record Exam (GRE), Medical Candidacy Aptitude Test (MCAT), DAT, or OAT. These do not allow you to use calculators. They expect you can answer questions quantitatively. The reason is simple; quantitative inaccuracies in some professions can kill people. If you think this is a difficulty for you, or if this is suggested by class and first exam performance, I will be happy to talk with you about possible ways to approach this situation. You can use a calculator on my examinations, but questions are typically written so simple math operations you can do by hand should be sufficient.

Some in the past have had difficulty in this course because they did not attend class and, thus, did not know what to emphasize in their studies. In addition, a lot of time can be wasted on an examination if you have not taken time to practice the problem-solving approaches illustrated in the *Primer*. These weaknesses can be avoided by attending class, by working to understand the concepts and applications discussed there, and by practicing this material through working the problems in the *Primer*. I want you to be successful! So, please take these pieces of advice seriously. Thank you.

Week of:	Topic	Reading
16 Jan	Introduction; Mitosis and Meiosis	Text: 1, 4; Primer: 1, 2
23 Jan	Mendelian Genetics	Text: 4, 2; Primer: 4, 6 (assigned problems)
30 Jan	Mendelian Genetics; Pedigree Analysis; Probability and Chi Square PRACTICE EXAM (Friday, 3 Feb)	Text: 3, 5 (pp. 119-120) Primer: 5, 7, 8

6 Feb 7	Mendelian Genetics; Chromosome Basis of Inheritance EXAM #1 (Friday, 10 Feb)	Text: finish 2-4; Primer: finish 4-
13 Feb	Linkage and Mapping	Text: 5; Primer: 10, 11, 12
20 Feb	Structure of DNA DNA Replication	Text: 6 Primer: 3
27 Feb	Anatomy and Function of a Gene Mutation	Text: 7 Primer: 15
6 Mar	Gene Transcription and Translation EXAM #2 (Wednesday, 8 Mar) Gene Transcription and Translation (continued)	Text: 8, 9; Primer: 17
13 Mar	***** Spring Vacation *****	
20 Mar	Genome Analysis Eukaryotic Chromosome Organization	Text: 10, 11; Primer: 20 Text: 12
27 Mar	Changes in Structure and Number Genetics of Bacteria and Viruses	Text: 13; Primer: 14, 16 Text: 14; Primer: 13
3 Apr	Genetics of Bacteria and Viruses Non-Mendelian Inheritance EXAM #3 (Friday, 7 Apr)	Text: 14 Text: 15; Primer: 13 and assigned problems in earlier chapters
10 Apr	Gene Regulation	Text: 16, 17; Primer: 18, 19
17 Apr	WRITTEN PROJECT DUE (Monday, 17 April) Gene Regulation and Development Genetics of Populations	Text: 18, 19 Text: 20; Primer: 21
24 Apr	Genetics of Populations EXAM #4 (Friday, 28 April)	Text: 20; Primer: 9
1 May	Population Genetics and Evolution Genetics and Ethical Issues	Text: 21 Primer: 22

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