Genetics--BISC 325 (Fall 2007)

Instructors:

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Meeting times:

Lec 13340R	**1:00 PM – 1:50 PM**	**MWF**	**SAL 101**
Dis 13341R	9:30-10:50 AM	T	ZHS360
Dis 13342R	12:30 - 1:50 PM	T	ZHS360
Dis 13343R	12:30 - 1:50 PM	Th	ZHS360
Dis 13344R	3:30 - 4:50 PM	M	ZHS360
Dis 13345R	3:30 - 4:50 PM	W	ZHS360
Dis 13346R	9:30-10:50 AM	Th	ZHS360

Overview and Course Content:

The aim of this course is to introduce students to the fundamental aspects of genetics, from the molecular level to the level of the organism and populations, including:
* Fundamentals of gene structure, function, and transmission
* Methods of genetic manipulation
* Systems genetics
* Genetic analysis of populations and evolution

Prerequisites:

Biological Sciences 120/121 and 220/221 (the First-year Biology sequence)
Biological Sciences 311 -or- 320, Molecular Biology (co-registration allowed)
Organic Chemistry 322a/325a and 322b/325b, (co-registration allowed)
Or permission of instructor.
Familiarity with basic chemistry and physics is assumed.
Facility with algebra is recommended.

Text: *Modern Genetic Analysis* (Second Edition) by A.J.F. Griffiths, W.M. Gelbart, R.C. Lewontin, and J.H. Miller. W.H. Freeman & Co., 2002. Additional readings from the primary literature may also be assigned.

Web Site: Course materials and announcements will be posted to Blackboard and/or http://www.usc.edu/dept/LAS/biosci/courses/bisc325.html. You are responsible for checking both.

Course E-mails will be sent only to your official USC email address.

Course Credit:

Midterm Exam 1 30%
Midterm Exam 2 30%
Final Exam 40%

Discussion Sections:

Discussion sections will be led by Teaching Assistants and will supplement and complement lectures. Review questions will be discussed in section.

Week	Day	Date	Topics	Reading	Faculty
1	Mon	Aug 27	Introduction/Genetics and the organism	Chapter 1	SF
	Wed	Aug 29			SF
	Fri	Aug 31	The structure of genes and genomes	Chapter 2	SF
2	**September 3 Labor Day-University Holiday**				
	Wed	Sep 5	""	""	SF
	Fri	Sep 7	Gene Function	Chapter 3	SF
3	Mon	Sep 10			SF
	Wed	Sep 12	The transmission of DNA at cell division	Chapter 4	SF
	Fri	Sep 14			SF
4	Mon	Sep 17	The inheritance of single gene differences	Chapter 5	SF
	Wed	Sep 19			SF
	Fri	Sep 21			SF
5	Mon	Sep 24	Recombination in bacteria and their viruses	Chapter 7	SF
	Wed	Sep 26			SF
	Fri	Sep 28			SF
6	Mon	Oct 1	**MIDTERM 1 (Material through 9/28)**		--
	Wed	Oct 3	Genetic recombination in eukaryotes	Chapter 6	SN
	Fri	Oct 5			SN
7	Mon	Oct 8	Genomics	Chapter 9	SN
	Wed	Oct 10			SN
	Fri	Oct 12			SN
8	Mon	Oct 15	Gene mutation: Origins & repair processes	Chapter 10	MA
	Wed	Oct 17			MA
	Fri	Oct 19	Chromosome mutations	Chapter 11	MA
9	Mon	Oct 22			MA
	Wed	Oct 24	Mutational dissection	Chapter 12	MA
	Fri	Oct 26			MA
10	Mon	Oct 29	Regulation of gene transcription	Chapter 13	MA
	Wed	Oct 31			MA
	Fri	Nov 2	From gene to phenotype	Chapter 14	MA
11	Mon	Nov 5	From gene to phenotype	Chapter 14	MA
	Wed	Nov 7	**MIDTERM 2 (Material through 11/2)**		--
	Fri	Nov 9	Regulation of cell number: Normal & cancer	Chapter 15	MA
12	Mon	Nov 12			MA
	Wed	Nov 14	The genetic basis of development	Chapter 16	MA
	Fri	Nov 16			MA
13	Mon	Nov 19	Population genetics	Chapter 17	SN
	Wed	Nov 21			SN
	November 22-23 Thanksgiving-University Holiday				
14	Mon	Nov 26	Quantitative genetics	Chapter 18	SN
	Wed	Nov 28			SN
	Fri	Nov 30			SN
15	Mon	Dec 3	Evolutionary genetics	Chapter 19	SN
	Wed	Dec 5			SN
	Fri	Dec 7			SN

Final Exam: Wednesday, December 19--11AM - 1PM

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Course Policies:

1) Exam dates are firm. There are no makeup exams in the course. Performance on the final may be prorated to substitute for a missing midterm exam, if an excuse considered valid by faculty is presented in a timely fashion. An acceptable written excuse or documentation must be provided to the faculty.

2) Midterm exams will be returned to students by the TAs. The final examination will not be returned but will be retained for one semester by the faculty.

3) Regrades: If you think an answer you have provided was graded incorrectly or if there is an arithmetic error, you may seek a regrade. You must provide a written explanation of why you think your answer was graded incorrectly. Regrade requests are to be submitted to your TA. If a regrade is agreed upon, then the ENTIRE EXAMINATION may be subject to a regrade. Your grade may therefore go up, go down, or remain the same. Regrade requests must be received within one week of when the exam key is posted for midterms, or by the second week of classes the following semester for the final exam.

4) No special assignments for extra credit are permitted.

5) Academic integrity policies of the University will be strictly followed. Infractions can result in severe penalties. There may be assigned seating for exams. No student may be admitted to an exam after the first student has left the exam.

6) Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to Professor Finkel as early in the semester as possible. DSP is located in STU 301 and is open 8:30 AM – 5:00 PM, Monday thru Friday, Phone number: 213-740-0776.

7) It may be necessary to make adjustments to the syllabus during the semester. Check the course web site or class announcements on Blackboard for updates. **Exam dates will not be changed.**

8) Any questions or concerns regarding these policies should be addressed to faculty.