

Genetics — BISC 325 (Fall 2008)

Instructors:

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Teaching Assistants:

TBA

Meeting times:

<u>Lec 13340R</u>	<u>1:00 PM – 1:50 PM</u>	<u>MWF</u>	<u>THH 101</u>
Dis 13341R	9:30-10:50 AM	T	VKC210
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	VKC151
Dis 13345R	3:30 - 4:50 PM	W	VKC151
Dis 13346R	9:30-10:50 AM	Th	VKC210

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
- Population genetics 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)
- Familiarity with basic chemistry, physics, and algebra

Exceptions may be permitted by one of the instructors.

Text: Introduction to Genetic Analysis. 9th Edition. A. Griffiths, S. Wessler, R. Lewontin, S. Carroll. Published by W.H. Freeman and Company

Web Site: Course materials and announcements will be posted to Blackboard. You are responsible for checking the website.

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.

Schedule:

Note that the course uses a new book and a new mix of instructors. The exact schedule is therefore subject to change.

Week	Day	Date	Topics	Faculty
1	Mon	25-Aug	Chapter 1: The Genetic Approach to Biology	MN
	Wed	27-Aug	Chapter 1: The Genetic Approach to Biology	MN
	Fri	29-Aug	Chapter 2: Transmission Genetics	MN
2	Monday	1-Sep	Labor Day-University Holiday	
	Wed	3-Sep	Chapter 2: Transmission Genetics	SN
	Fri	5-Sep	Chapter 3: Independent Assortment of Genes	MN
3	Mon	8-Sep	Chapter 3: Independent Assortment of Genes	SN
	Wed	10-Sep	Chapter 3: Independent Assortment of Genes	SN
	Fri	12-Sep	Chapter 4: Mapping Eukaryote Chromosomes by Recombination	SN
4	Mon	15-Sep	Chapter 4: Mapping Eukaryote Chromosomes by Recombination	SN
	Wed	17-Sep	Chapter 4: Mapping Eukaryote Chromosomes by Recombination	SN
	Fri	19-Sep	Chapter 5: The Genetics of Bacteria and Their Viruses	SN
5	Mon	22-Sep	Chapter 5: The Genetics of Bacteria and Their Viruses	SN
	Wed	24-Sep	Chapter 6: Gene Interaction	SN
	Fri	26-Sep	Chapter 6: Gene Interaction	SN
6	Mon	29-Sep	Midterm Exam	
	Wed	1-Oct	Chapter 7: DNA structure and Replication	MA
	Fri	3-Oct	Chapter 7: DNA structure and Replication	MA
7	Mon	6-Oct	Chapter 8: RNA Transcription and Processing	MA
	Wed	8-Oct	Chapter 8: RNA Transcription and Processing	MA
	Fri	10-Oct	Chapter 9: Proteins and their synthesis	MA
8	Mon	13-Oct	Chapter 9: Proteins and their synthesis	MA
	Wed	15-Oct	Chapter 10: Regulation of gene expression; Prokaryotes	MA
	Fri	17-Oct	Chapter 10: Regulation of gene expression; Prokaryotes	MA
9	Mon	20-Oct	Chapter 11: Regulation of gene expression; Eukaryotes	MA
	Wed	22-Oct	Chapter 11: Regulation of gene expression; Eukaryotes	MA
	Fri	24-Oct	Chapter 12: Genetic control of development	MA
10	Mon	27-Oct	Chapter 12: Genetic control of development	MA
	Wed	29-Oct	Chapter 13: Genomes and Genomics	MA
	Fri	31-Oct	Chapter 13: Genomes and Genomics	MA
11	Mon	3-Nov	Midterm Exam	
	Wed	5-Nov	Chapter 14: The Dynamic Genome	MN
	Fri	7-Nov	Chapter 14: The Dynamic Genome	MN
12	Mon	10-Nov	Chapter 15: Mutation, Repair, and Recombination	MN
	Wed	12-Nov	Chapter 15: Mutation, Repair, and Recombination	MN
	Fri	14-Nov	Chapter 16: Large-scale chromosomal changes	MN
13	Mon	17-Nov	Chapter 16: Large-scale chromosomal changes	MN
	Wed	19-Nov	Chapter 17: Population genetics	MN
	Fri	21-Nov	Chapter 17: Population genetics	MN
13	Mon	24-Nov	Chapter 17: Population genetics	MN
	Wed	26-Nov	Chapter 18: Quantitative Genetics	SN
	Fri	28-Nov	Thanksgiving	
14	Mon	1-Dec	Chapter 18: Quantitative Genetics	SN
	Wed	3-Dec	Chapter 19: Evolutionary Genetics	SN
	Fri	5-Dec	Chapter 19: Evolutionary Genetics	SN
Final Exam Wednesday, Dec. 17 11-1 p.m.				

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 Nordborg 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.