

Genetics, Genomics and Cell Biology, Fall 2013

Monday, Wednesday, Friday 9-10 AM, 2050 VLSB

Instructors

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GSI

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Course focus

This course will introduce students to key concepts in genetic analysis, eukaryotic cell biology, and state-of-the-art approaches in genomic medicine. Lectures will highlight basic knowledge of cellular processes that form the basis for human diseases. Emphasis in this course will be on eukaryotic cell processes, including cellular organization, dynamics, and signaling.

Grading

Midterm 1 (September 26 7-9 PM)	100 points
Midterm 2 (October 23 7-9 PM)	100 points
Midterm 3 (November 21 7-9 PM)	100 points
Final exam (December 19, 7-10 PM)	100 points
Quizzes (3 total, 25 points each)	75 points
Mini Quizzes (10 total, 2.5 points each)	25 points
Total	500 points

Exam policies and regrades

All exams are closed book and no notes or other reference materials can be used.

Regrade requests for all exams except the final can be made in writing by the dates specified in class. A subset of all exams will be photocopied prior to being handed back. Anyone caught cheating on a quiz, exam, or regrade request in this course will receive a failing grade in the course and will also be reported to the University Center for Student Conduct.

Textbook

Customized text from "Genetics" by Hartwell et al,

"Essential Cell Biology" by Alberts et al, Chapters 15, 16, 17 and 18, available for \$9 each

from: <http://store.vitalsource.com/show/978-0-2038-2820-5>

<https://bspace.berkeley.edu>

Contains class announcements and other resources, including slides from lectures. The course site is entitled, "Genetics, Genomics and Cell Biology Fall 2013".

ASUC Lecture Notes Online

Complete lecture notes will be available online at <https://notes.berkeley.edu> for a small fee.

Disclaimer: those notes are not proofread by the instructors.

Additional Needs

Please contact your GSI or Instructor if you require additional assistance.

Lectures

1. F, Aug 30	Course into and overview of genetics (ME, CM, MW)
M, Sep 2	Labor Day Holiday
2. W, Sep 4	Mutation and the origins of genetic variation (ME)
3. F, Sep 6	Transmission of DNA from parents to offspring (ME)
4. M, Sep 9	The fate of new mutations (ME)
5. W, Sep 11	Genotypes and Phenotypes (ME)
6. F, Sep 13	Recombination (ME)
7. M, Sep 16	Sex chromosomes and sex determination (ME)
8. W, Sep 18	Genetic mapping (ME)
9. F, Sep 20	Genetic mapping (ME)
10. M, Sep 23	Personal Genomics (ME)
11. W, Sep 25	Human Origins (ME)
Th, Sep 26	Evening Midterm 1, 7-9pm
12. F, Sep 27	Sequencing and assembling genomes I (CM)
13. M, Sep 30	Sequencing and assembling genomes II (CM)
14. W, Oct 2	Genome dynamics (CM)
15. F, Oct 4	Genetic screens (CM)
16. M, Oct 7	Gene regulation (CM)
17. W, Oct 9	Molecular genotyping (CM)
18. F, Oct 11	Population genetics (CM)
19. M, Oct 14	Quantitative genetics (CM)
20. W, Oct 16	Genome Wide Association Studies I (CM)
21. F, Oct 18	Genome Wide Association Studies II (CM)
22. M, Oct 21	Review (CM)

23. W, Oct 23 (CM)	Genetics, genomics and cell biology of vertebrate pigmentation
W, Oct 23	Evening Midterm 2, 7-9pm
24. F, Oct 25	Cell compartmentalization and organization (MW)
25. M, Oct 28	Cell signaling I (MW)
26. W, Oct 30	Cell signaling II (MW)
27. F, Nov 1	Cell cycle regulation I (MW)
28. M, Nov 4	Cell cycle regulation II (MW)
29. W, Nov 6	Intracellular transport I
30. F, Nov 8	Intracellular transport II
M, Nov 11	Veteran's Day Holiday
31. W, Nov 13	Cytoskeleton I (MW)
32. F, Nov 15	Cytoskeleton II (MW)
33. M, Nov 18	Cell division mechanisms (MW)
34. W, Nov 20	Review (MW)
Th, Nov 21	Evening Midterm 3, 7-9pm
35. F, Nov 22	Human disease topic I, genetics (ME)
36. M, Nov 25	Human disease topic I, genomics (CM)
37. W, Nov 27	Human disease topic I, cell biology (MW)
F, Nov 29	Thanksgiving Holiday
38. M, Dec 2	Human disease topic II, genetics (ME)
39. W, Dec 4	Human disease topic II, genomics (CM)
40. F, Dec 6	Human disease topic II, cell biology (MW)
M-F, Dec 9-13	Reading, recitation and review week
Th, Dec 19	Final Exam, 7-10pm