

GNET/BIOL 621 Fall 2010

BIOL/GNET 621 is an upper-level genetics course intended for graduate students, but also open to advanced undergraduates. The course will cover genetic principles and tools through lectures, reading of research articles, and discussion. We have not assigned a textbook, but you may wish to consult one if you need to review introductory genetics. Any the textbooks used for BIOL 202 is appropriate.

GRADING

Final grades will be based on:

- 45% Exams: two midterms and a comprehensive final
- 35% Problem sets
- 20% Recitation participation, including paper presentation

EXAMS

There will be two in-class midterm exams. Each will be 100 points and count for 10% of your final grade. There will be a comprehensive final exam that will be 25% of the final grade. It will have 150 points from the final third of the course and 50 points from each of the first and second thirds of the course. Exams will consist of questions similar to those on problem sets, and are meant to emphasize conceptual understanding of genetics. *No makeup exams will be given; this includes the final!*

PAPER PRESENTATION

One or two original research papers will be assigned as reading to accompany each lecture or topic. Each week, a group of 3-4 students will present one of these papers during recitation. Dates will be assigned/chosen at the first recitation meeting. Your presentation counts at 10% of your grade. When other students are presenting, you will be expected to pay attention and contribute to discussion by asking or answering questions, responding to comments by other students, etc. 10% of your grade will be based on your participation in recitation.

PROBLEM SETS

Problem sets will be assigned most weeks. These will include problems and questions about the lectures and reading. You are encouraged to work collaboratively to solve the problems, but each student must write and turn in his or her own answers. You can turn them in at class or post them to Blackboard with the Assignment tool. Problem sets will be graded and returned. Late problem sets will not be accepted. Problem sets count as 35% of your grade.

GNET/BIOL 621 Fall 2010**Lecture: 11:00 AM - 12:15 PM Tues/Thurs in 128 Wilson Hall****Recitation: 2:00 PM - 02:50 PM Fridays, 128 Wilson Hall**

Tues	Aug 24	Copenhaver	Introduction, DNA & chromosome structure
Thurs	Aug 26	Copenhaver	Meiosis & mitosis
Fri	Aug 27	TAs	<i>Discussion: TAs present 1st paper</i>
Tues	Aug 31	Copenhaver	Mendelian basics
Thurs	Sept 2	Copenhaver	Molecular biology basics
Fri	Sept 3	TAs	<i>Discussion</i>
Tues	Sept 7	Copenhaver	Chromosome aberrations
Thurs	Sept 9	Copenhaver	Linkage and mapping
Fri	Sept 10	TAs	<i>Discussion</i>
Tues	Sept 14	Copenhaver	Tetrad analysis & LODs
Thurs	Sept 16	Copenhaver	Recombination I
Fri	Sept 17	TAs	<i>Discussion</i>
Tues	Sept 21	Copenhaver	Recombination II
Thurs	Sept 23	Copenhaver	Exam 1
Fri	Sept 24		NO DISCUSSION MEETING
Tues	Sept 28	Sekelsky	Mutations and Mutagenesis
Thurs	Sept 30	Sekelsky	Genetic Screens
Fri	Oct 1	TAs	<i>Discussion</i>
Tues	Oct 5	Sekelsky	Complementation
Thurs	Oct 7	Sekelsky	Complementation complexities
Fri	Oct 8	TAs	<i>Discussion</i>
Tues	Oct 12		UNIVERSITY DAY
Thurs	Oct 14	Sekelsky	Epistasis and pathway analysis
Fri	Oct 15	TAs	<i>Discussion</i>

Tues	Oct 19	Kohl	Bacterial genetics
Thurs	Oct 21		FALL BREAK
Fri	Oct 22		FALL BREAK
Tues	Oct 26	Sekelsky	Mosaicism
Thurs	Oct 28	Sekelsky	Mosaic analysis
Fri	Oct 29	TAs	<i>Discussion</i>
Tues	Nov 2	Sekelsky	Exam 2
Thurs	Nov 4	Ahmed	DNA transposons
Fri	Nov 5	TAs	<i>Discussion</i>
Tues	Nov 9	Ahmed	Retrotransposons
Thurs	Nov 11	Ahmed	Gene targeting
Fri	Nov 12	TAs	<i>Discussion</i>
Tues	Nov 16	Ahmed	RNAi I
Thurs	Nov 18	Ahmed	RNAi II
Fri	Nov 19	TAs	<i>Discussion</i>
Tues	Nov 23	Ahmed	Non-Mendelian inheritance
Thurs	Nov 26		THANKSGIVING
Fri	Nov 27		THANKSGIVING
Tues	Nov 30	Ahmed	Epigenetics I
Thurs	Dec 2	Ahmed	Epigenetics II
Fri	Dec 3	TAs	<i>Discussion</i>
Tues	Dec 7	Ahmed	Epigenetics III
THUR	DEC 16		CUMMULATIVE FINAL EXAM 12:00 – 3:00 PM