Course Policies

**Lecture:** Tues & Thurs 11:00 am - 12:15 pm, 311 Peabody

**Recitation:** Fridays, 2:30 - 3:20 pm, 311 Peabody

**Instructors:** See Sakai site

BIOL/GNET 621 is an upper-level genetics course intended for graduate students and advanced undergraduates. Undergraduates must have taken BIOL 202 or the equivalent; there are no pre-requisites for graduate students. The course covers 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 textbook used for BIOL 202 is okay.

**Grading**

Final grades will be based on:

- 36% Exams: two midterms and a comprehensive final
- 40% Problem sets
- 24% Recitation (participation and paper presentation)

**Exams**

There will be two in-class midterm exams. Each will be 100 points and count for 8% of your final grade. There will also be a comprehensive final exam. This exam will have 150 points from the final third of the course, plus 50 points from each of the first and second thirds of the course, and will be 20% of the final grade.

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! We are required to have a final exam at the time scheduled by the University. If your other courses decided to have an exam at some time of the instructors' choosing and it conflicts with this final, you must arrange for a different time with the other instructor.

**Paper presentation**

One or two original research papers will be assigned as reading to accompany each lecture or topic. Each week, a group of 2-3 students will present one of these papers during recitation. Dates will be assigned/chosen at the first recitation meeting. Your presentation counts as 12% of your grade.

When other students are presenting, you will be expected to pay attention and contribute to discussion by asking or answering questions (yes – asking questions counts, too, even questions about not understanding parts of the article), responding to comments by other students, explaining figures or text from the article being discussed, etc. 12% 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 Sakai with the Assignment tool. Problem sets will be graded and returned. Late problem sets will not be accepted. Problem sets count as 40% of your grade.
# Schedule of class meetings

## Part I: Genetic Principles (Copenhaver)

<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Topic</th>
<th>Readings</th>
</tr>
</thead>
<tbody>
<tr>
<td>26</td>
<td>Fri</td>
<td>No discussion this week</td>
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</tr>
<tr>
<td>Sept 1</td>
<td>Fri</td>
<td>Discussion (TA presents first paper)</td>
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<tr>
<td>8</td>
<td>Fri</td>
<td>Discussion</td>
<td></td>
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<tr>
<td>12</td>
<td>Tues</td>
<td>Linkage and mapping</td>
<td></td>
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<tr>
<td>15</td>
<td>Fri</td>
<td>Discussion</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Tues</td>
<td>Association mapping</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Thurs</td>
<td>Exam I</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Fri</td>
<td>No discussion this week</td>
<td></td>
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</tbody>
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Part II: Genetic Analysis (Sekelsky)

Sept 26 Tues Genetic Screens

28 Thurs Mutations and Mutagenesis

29 Fri Discussion

Oct 3 Tues Complementation

5 Thurs Complementation complexities & Genetic interactions

6 Fri Discussion

10 Tues Epistasis and pathway analysis

12 Thurs No class: University Day

13 Fri Discussion

17 Tues Mosaicism

19 Thurs No class: Fall Break

20 Fri No discussion this week

24 Tues Mosaic analysis

26 Thurs Bacterial genetics


27 Fri Discussion

31 Tues Genetic interactions

Nov 2 Thurs Exam 2
Part III: Non-Mendelian Genetics (Ahmed)

Nov 8 Tues DNA transposons

10 Thurs Retrotransposons

11 Fri Discussion

15 Tues Gene targeting

17 Thurs RNAi I

18 Fri Discussion

22 Tues RNAi II

24 Thurs THANKSGIVING
25 Fri THANKSGIVING

29 Tues Non-Mendelian inheritance

Dec 1 Thurs Epigenetics I

2 Fri Discussion

6 Thurs Epigenetics II

15 Thurs CUMMULATIVE FINAL EXAM 12:00 – 3:00 pm