# BioSci 0355 Honors Genetics
## Fall Term 2013

**Instructor**
Lewis Jacobson  
Office Hours: Tue, Thu 2:45-4:00  
527 Langley Hall  
412-624-4647  
LJAC@pitt.edu

**Lectures:**  
Tuesday, Thursday, 11:00 to 12:15, 214 Langley Hall

**Recitations:**  
Friday, 1:00 to 2:50, 214 Langley Hall

**Text:**  

<table>
<thead>
<tr>
<th>Lect.</th>
<th>Date</th>
<th>Topic</th>
<th>Text</th>
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| 1     | T        | Aug. 27  
Introduction: Main ideas, model organisms | 1          |
| 2     | H        | Aug. 29  
Mendelian genetics 1: Genes, segregation | 3          |
| 3     | T        | Sep. 3   
Mendelian genetics 2: Independent assortment | 3, 4.6     |
| 4     | H        | Sep. 5   
Alleles and phenotypes | 3.6        |
| 5     | T        | Sep. 10  
Gene interaction | 1.4, 3.6   |
| 6     | H        | Sep. 12  
Linkage & chromosomes | 5.1-5.3    |
| 7     | T        | Sep. 17  
Recombination & recombination mapping | 5.1-5.3    |
| 8     | H        | Sep. 19  
Sex determination & sex-linked inheritance | 4.4        |
| 9     | T        | Sep. 24  
Tetrad analysis | 5.4        |
| 10    | H        | Sep. 26  
DNA as the genetic material | 1, 2.1-2.2 |
| T     | Oct. 1   | **FIRST EXAM (Lectures 1-9)**                                      |            |
| 11    | H        | Oct. 3   
DNA replication | 6.1-6.6    |
| 12    | T        | Oct. 8   
Transcription: RNA synthesis and processing | 10.1-10.5  |
| 13    | H        | Oct. 10  
DNA in chromosomes | 7, 8       |
| T     | Oct. 15  | **No Class — Fall Break**                                          |            |
| 14    | H        | Oct. 17  
The genetic code and translation: Protein synthesis | 10.6-10.8  |
| 15    | T        | Oct. 22  
Mutations and mutagenesis | 14.1-14.5  |
| 16    | H        | Oct. 24  
Gene structure and phenotypes | 13         |
| 17    | T        | Oct. 29  
DNA repair and recombination | 14.6-14.7  |
| 18    | H        | Oct. 31  
Recombinant DNA methods | 2.3-2.4, 12 |
| T     | Nov. 5   | **SECOND EXAM (Lectures 10-17)**                                   |            |
| 19    | H        | Nov. 7   
Recombinant DNA applications | 2.5-2.7    |
|       |          |                                                      | 12.5-12.6  |
| 20    | T        | Nov. 12  
Gene regulation in prokaryotes | 11.1-11.4  |
| 21    | H        | Nov. 14  
Transcriptional regulation in eukaryotes | 11.5       |
| 22    | T        | Nov. 19  
Post-transcriptional regulation | 11.7-11.9  |
| 23    | H        | Nov. 21  
Higher-order organization: modENCODE
http://www.modencode.org |            |
| 24    | T        | Nov. 26  
Genomics & functional genomics | 12.4-12.6  |
| 25    | T        | Dec. 3   
Epigenetics | 11.6       |
| 26    | H        | Dec. 5   
The future of genetics: Science & society |            |

**SATURDAY Dec. 14**  
**FINAL EXAM** (8:00 - 9:50, 214 Langley Hall)  
(The Final Exam will cover the entire course, but will emphasize Lectures 18-25)

*This document is also available online. See CourseWeb.*
Electronics
Laptop note-taking is OK, but do not abuse the privilege by reading e-mail or Web. Please turn off your cell phone before entering class. Music devices and earbuds are not welcome. Texting in class will be considered extremely rude, at the least.

CourseWeb
All course documents can be found on CourseWeb. You will find there everything (more or less) that you receive in class as paper copies. In addition, there are links to other Web sites of interest. I suggest you look at these.

Lecture Materials
Copies of lecture materials will be in Langley Library, not on CourseWeb. All lectures will be recorded digitally. Recordings as .mp3 files will be posted on CourseWeb by the morning of the day following each lecture. Every effort will be made to get good recording, but accidents may happen. Students wishing to make their own recordings should ask permission from the instructor. Any such recording properly approved in advance can be used solely for the student’s own private use and may not be provided to people not enrolled in this class.

Reading assignments
You are expected to read assigned chapter(s) before the lecture in which the subject matter is covered. You are responsible for all material in assigned readings, even if not covered in lecture.

Recitations
You are expected to attend recitation every Friday. Recitations will be used to go over assigned problems (including Virtual Flylab exercises) and to answer questions about lectures or text. Experience suggests that students who attend recitation regularly are more likely to do well.

Instructor's Office Hours
Dr. Jacobson will have regular office hours Tuesdays and Thursdays, 2:45–4:00. A signup sheet for appointments will be posted outside 527 Langley Hall. If you wish to see the instructor, please sign up for an appointment on the sheet for your chosen day, on a first-come-first-served basis. Two or three students who have the same questions may sign up for a joint appointment. Appointments may be heavily booked immediately before an exam, so plan ahead. If you cannot make it during office hours, please phone to make an appointment at another time.

Electronic Mail Discussion
You can submit questions, inquiries or messages by electronic mail to LJAC@pitt.edu. Dr. Jacobson will check this mailbox at least once a day on weekdays, sporadically on weekends. If you want acknowledgment that a message has been received, please say this in your message. The instructor is not responsible for any failure in e-mail communications. You will get an address list to communicate with other students by e-mail. The University requires the following statement:

Each student is issued a University e-mail address (username@pitt.edu) upon admittance. This e-mail address may be used by the University for official communication with students. Students are expected to read e-mail sent to this account on a regular basis. Failure to read and react to University communications in a timely manner does not absolve the student from knowing and complying with the content of the communications. The University provides an e-mail forwarding service that allows students to read their e-mail via other service providers (e.g., Hotmail, AOL, Yahoo). Students that choose to forward their e-mail from their pitt.edu address to another address do so at their own risk. If e-mail is lost as a result of forwarding, it does not absolve the student from responding to official communications sent to their University e-mail address. To forward e-mail sent to your University account, go to http://accounts.pitt.edu, log into your account, click on Edit Forwarding Addresses, and follow the instructions on the page. (For the full E-mail Communication Policy, go to www.bc.pitt.edu/policies/policy/09-09-10-01.html.)
Disability

If you have a disability for which you are or may be requesting an accommodation, you are encouraged to contact both your instructor and the Office of Disability Resources and Services, 216 William Pitt Union, 412-648-7890/412-383-7355 (TTY), as early as possible in the term. Disability Resources and Services will verify your disability and determine reasonable accommodations for this course.

Exams

Exams will consist of a mixture of short essay questions and problems to be solved. The in-class exams on Oct. 1 and Nov. 5 will be 80 minutes long. The Final Exam on Dec. 14 will be 110 min. long. Note that the Final Exam is scheduled at 8:00, not regular class time.

Grading

Each in-class exam will count 100 points and the Final Exam will count 150 points. Final letter grades will be based upon your total score on in-class exams and the Final Exam.

Group Study

Students are strongly encouraged to work in groups to learn, study and prepare for exams. There will be group assignments later in the term. Please see the instructor if you need help with establishing or operating study groups.

Academic Integrity

Cheating/plagiarism will not be tolerated. If you are caught cheating during an exam, your paper will be confiscated and, at a minimum, you will be assigned a grade of zero for that exam. Further action may be taken through the Academic Integrity Review process. University policies are at: http://www.provost.pitt.edu/info/ai1.html

Excused Absences from Exams

If an emergency (defined as illness, serious injury, death in the immediate family, etc.) prevents you from taking an exam, you must notify the Instructor in writing (not e-mail) no later than 2 weeks after the date of exam. [A telephone call in advance is greatly appreciated.] You must give your name, the date of the missed exam and, if a medical excuse is involved, a documenting letter from your physician. If competition in intercollegiate athletics (or the band!) prevents you from taking an exam, you must provide a written request from your coach/director before the exam.

If you have an excused absence from an exam, your final grade will be based upon the average of the exams that you do take. In the absence of a properly documented written excuse, you will be assigned a grade of zero for that exam.

No student will be excused from more than one exam. If you miss more than one exam, see the CAS Dean's Office (Thackeray Hall) or a BioSci advisor to withdraw officially from the course.

Late Withdrawal from the Course

The instructor will not approve any requests for withdrawal after the second exam on Nov. 5, except in extraordinary circumstances. Poor student performance is not considered to be an extraordinary circumstance justifying permission to withdraw.