Class Schedule:

Lecture: H+-block
T, Th, 1:30-2:45
Barnum 008

Optional Recitation: KW-block
Wed 4:30-5:20
Barnum 008

Instructor: Dr. Michelle F. Gaudette
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Textbook & Supplements:

Text:

Genetics: From Genes to Genomes, 4th edition, Hartwell, L.H., Hood, L., Goldberg, M.L., Reynolds, A.E., & Silver, L.M

Hardbound: ISBN 9780073525266 or 007352526X
Paperback: ISBN 9780071221924 or 0071221921
Etext: ISBN 9780077295080 or 0077295080.
The e-text is available at http://www.coursesmart.com

Solutions manual:

Study Guide/Solutions Manual to accompany Genetics, Nero, D.,
ISBN 978007295110 or 0077295110.

Supplement:

The Supplement (blue booklet) should be purchased from the Biology Department.
Cost, times, and place are posted on the course Trunk site under Announcements.

Course Description:

The overall goal of Bio 41 is to provide students with a solid understanding of classical and molecular genetics. Topic covered will include Mendelian inheritance and exceptions, genetic mapping, recombination, the genetic code, gene transcription and translation, regulation in prokaryotes and eukaryotes, genetic engineering, and human chromosomal abnormalities. You are expected to have a knowledge of mitosis, meiosis, Mendelian genetics, and basic molecular biology (DNA, RNA, protein) from a college level introductory biology course. Ordinarily, Biology 41 should **not** be your first biology course at college.

Course Objectives:

At the end of this course students should be able to:

- explain Mendel's theories of inheritance and the chromosomal basis of inheritance
- describe & differentiate between mitosis and meiosis
- explain the processes of replication, transcription, and translation
- explain how genes are controlled
- explain modern molecular biological techniques used in genetic analysis
- apply knowledge & concepts to novel problems

Evaluation: Grades will be based on 3 tests with a cumulative total of 315 possible points:

Test I - 85 points
Test II - 105 points
Test III - 125 points

Trunk site: (http://trunk.tufts.edu)

Syllabus – full copy of this document. Also available under **Resources/Basic Course Information/Syllabus**

Instructor Information – Dr. Gaudette's contact information, research interests, and teaching experience

Announcements – messages relevant to the course will be posted here

Resources/Basic Course Information

Syllabus & Schedule – also available on the departmental website.
Assignments (assigned readings, suggested problems, suggested web sites)
Teaching Team Contact Information
Disability Services Contact Information

Resources/External links – assigned links (many useful animations), organized by assignment title

Resources/Tests –2009 and 2010 tests with answers.

Resources/Slides – slides available in pdf format. To view, click Slides on the Blackboard menu and then click the set you have selected. To print, click the Printer icon on the tool bar. On Page scaling, select the number of pages (slides) you want to print per sheet of paper.

Resources/Historically Important Papers – published research underlying the information summarized in the text

Forums– questions that are brief can be posted on the Discussion board and will usually be answered within a day. There is a separate forum for each topic heading on the Assignments sheet.

Course Policies:

1. ***Cell phone, blackberries, etc. must be turned off during lectures, recitations, and exams.***
2. **Attendance** in lecture will not be recorded. However, students who attend lecture generally perform better than those who do not.
3. **The lecture schedule** should be used to determine when an assignment should be read.
4. **Homework** assignments are **not** collected. Detailed solutions to the text problems can be found in the *Solutions Manual.* Homework problems should be kept in a separate notebook. This makes it easier to review before the test.
5. **Office hours** of the instructor and the teaching assistants are listed on Blackboard. Use these office hours to clear up any questions about the lectures or homework problems as they arise. Do **not** wait until after the first test.
6. **Tests:** The test schedule is posted on the Blackboard web site.
   a. Excluding verifiable illness or serious family emergency, all students are expected to take tests on the days that they are given. Illness must be verified ***in writing*** by Health Service or a licensed physician (on letter-head stationery); a family emergency must be verified ***in writing*** by the Dean. A graduate or professional

school interview or test on the same day in another course is NOT a valid reason for missing a test. A grade of zero may be given for a missed test.

b. If an exam is missed (see a. above) arrangements for a make-up test must be made within ***three school days*** of the missed test.

c. **If you receive additional time** on tests, please provide documentation ***at least two weeks prior to the first exam*** so that arrangements can be made. If you need a distraction-free test environment, it is your responsibility to arrange this through the ARC.

d. Errors in marking or addition must be brought to the instructor's attention within ***four school days*** of the test's return to class. Put no marks of any kind on a returned test; attach a note.

e. No electronic device more complex than a simple calculator that cannot display graphs or text can be used during a test. No wireless device can be handled during a test.

f. There will be three tests with values of:

Test I - 85 points

Test II - 105 points

Test III -125 points

g. Test III is scheduled for December 15 at 3:30pm. Test III is not a comprehensive final exam. It will stress the material of the last third of the course and a small number of topics from the first two thirds of the course.

7. **Academic Honesty:** I expect all students to know and abide by the University's policy on academic integrity. To find the pdf document "Academic Integrity for graduate and undergraduate students, 2010-2011" go to the student services site – http://uss.tufts.edu/studentaffairs/judicialaffairs/index.asp – and follow the hotlink under Academic Integrity. Students who cheat will be referred to the Dean of Students for disciplinary action and will receive a grade penalty following the disciplinary guidelines.

SCHEDULE

September	6	Intro to class, Mendelian genetics
	8	Probability, Extensions to Mendelian genetics
	13	Extensions to Mendelian genetics
	14	4:30, Recitation
	15	Mitosis, meiosis, sex-linkage
	20	Linkage and recombination
	21	4:30, Recitation
	22	Linkage and recombination
	27	Bacteria, viruses
	28	4:30, Recitation
	29	DNA, DNA replication
October	4	DNA, DNA replication, molecular recombination
	5	4:30, Recitation
	6	**TEST I**
	11	Pathways, protein structure
	12	4:30, Recitation
	13	Gene expression
	18	Gene Expression
	19	4:30, Recitation
	20	Bacterial genetics
	25	Bacterial genetics
	26	4:30, Recitation
	27	Regulation in prokaryotes
November	1	Regulation in prokaryotes
	2	4:30, Recitation
	3	**TEST II**
	10	Recombinant DNA and allied methods
	15	Recombinant DNA and allied methods
	16	4:30, Recitation
	17	Genomics, Detection of genotypes
	22	Regulation in eukaryotes
	29	Regulation in eukaryotes
	30	4:30, Recitation
December	2	Chromosomes
	6	Transposable elements
	7	4:30, Recitation
	8	Catch-up day
	15	**TEST III at 3:30 p.m.**

NOTE: I will do my best to follow the course syllabus – however, I reserve the right to make modifications as needed during the semester.

Please refer to the "Assignments" document for a list of the readings, problems, and external links assigned for each topic.