

**PCB 3063 Genetics, Summer Semester A, 2014**

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Course Objectives: To present the basic concepts of Genetics. The course will emphasize transmission (classical) and molecular genetic principles.

Transmission genetics will include chromosome segregation and disorders of chromosome segregation in humans, Mendelian genetics, sex determination, and eukaryotic gene mapping.

Molecular genetics will cover DNA structure and replication, storage and expression of genetic material, regulation of gene expression and recombinant DNA technology.

This is an upper division class designed for students who have completed Biology I and two semesters of general chemistry.

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**TIME AND PLACE:**

Lecture: 12:30 -2:20 Monday, Tuesday, Wednesday and Thursday in CB1 104.

**CREDIT:**

PCB 3063: 3 semester hrs.

<b>LECTURE INSTRUCTOR</b>
Eric A. Hoffman
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Web Site: <a href="https://webcourses.ucf.edu">https://webcourses.ucf.edu</a> For PCB 3063

**OFFICE HOURS:**

**Dr. Hoffman's office hours will be Monday, Tuesday and Thursday 3:00-4:00.**

Also, I will always respond to email from students, however occasionally an email message may be lost. Phone or talk to me in class if I do not respond to your email within 24 hours. Responses will be slower on weekends. As a matter of courtesy you should identify yourself in any email you send.

**WEBCOURSES/CANVAS SITE:**

I have a course web site set up on WebCourses (<https://webcourses.ucf.edu>). I will use this to post a course syllabus, announce exam dates, and course notes. Please check the site regularly. I will encourage you to participate in online study chats and discussions.

**REQUIRED TEXT:**

*Genetics: a conceptual approach*, fourth edition. By Benjamin A. Pierce. W. H. Feeman and Company.(ISBN-13: 978-1-4292-3250-0)

**EVALUATION:**

Evaluation consists of six online (WebCourses) quizzes worth a total of 100 points (lowest quiz grade is dropped – 20 points each for your top 5 quizzes) and three lecture exams worth 100 points each. Total points possible are 400.

**ATTENDANCE:**

Although attendance is not recorded each class period, you will learn more effectively if you actively attend and interact in class.

**GRADES:**

The following scale will be used to assign course grades. There will be no further curve.

91-100 = A	78-79 = C+
90 = A-	71-77 = C
88-89 = B+	70 = C-
81-87 = B	60-69 = D
80 = B-	≤ 59 = F

**MAKEUPS:**

If you miss a test you must provide acceptable documented evidence (e.g. from doctor, police, etc.) that circumstances beyond your control prevented you from taking the test, or that you were required to participate in official University business. A doctor's note must be on letterhead with a contact phone number, and must indicate that a medical condition was treated. In the absence of acceptable documentation a grade of 0 will be assigned for the test. Makeup tests will be administered at any time during the semester at the discretion of the instructors.

**ACADEMIC DISHONESTY:**

**Any form of cheating or academic dishonesty, including stealing a copy of a test = automatic F and referral to The Office of Student Conduct for disciplinary action.** In addition, a "Z Designation" will be placed on the student's official transcript indicating academic dishonesty, where the letter Z will precede the final grade for this course. For more information about the Z Designation, see <http://z.ucf.edu/>.

**WITHDRAWAL:**

The deadline for withdrawal without penalty is published in the schedule as Thursday, June 5, 2014. You will need to decide whether or not to stick with the course by that time.

**EXPECTATIONS:**

You should have certain expectations of me. Among other things, you can expect me to (1) show up for class, (2) be punctual, (3) be prepared for class, (4) not waste your time, (5) answer your questions to the best of my ability, (6) do my best to present a thorough, modern perspective on the subject matter, (7) be fair in my evaluation of your performance, and (8) respect you as an individual. I, likewise, have expectations of you. Most of these should be obvious, but I will state them here so that there is no misunderstanding. I expect you to (1) show up for class, (2) **Do not come in late or leave early**, (3) sit near the front of the room to facilitate effective communication, (4) do not talk or text in class or otherwise disrupt the learning environment for others (no cell phones or pagers), (5) ask questions as appropriate and relevant to the material under discussion, (6) study hard, and (7) give me your "best shot" at doing well in the course.

**Please do not be late or leave early, this disrupts the class. CELL PHONES ARE A MAJOR DISTRACTION AND ARE PROHIBITED IN MY CLASS. Please turn them off prior to entering the room.**

## TENTATIVE LECTURE OUTLINE AND DISCUSSION TOPICS

I reserve the right to change this schedule on a moments notice; changes will be posted on the WebCT and mentioned in class!

Room: CL1 104; Time: 12:30 – 2:20

Date	Topic/Activity	Topic Theme
5/12/14	Syllabus, Introduction, Pre-test.	Reading: Chapter 1, <b>Transmission Genetics</b>
5/13/14	Chromosomes and Cellular Reproduction	Reading: Chapters 2, 9 <b>Problem set 1</b>
5/14/14	Basic Principles of Heredity	Reading: Chapter 3, <b>Problem set 2</b>
5/15/14	Sex Determination and Sex-linked Characteristics	Reading: Chapter 4, <b>Problem set 3</b> <b>Online quiz 1: Chapters 1 – 2</b>
5/19/14	Sex Determination and Sex-linked Characteristics, continued	
5/20/14	Extensions and Modifications of Basic Principles	Reading: Chapter 5, <b>Problem set 4</b> <b>Online quiz 2: Chapters 3 – 5</b>
5/21/14	Pedigree Analysis/Review for test	Reading: Chapter 6 up to and including 6.2 <b>Problem set 5</b>
5/22/14	<b>Exam 1</b>	<b>Material: Chapters 1 – 5, 9</b>
5/26/14	Memorial Day	Sleep in!
5/27/14	Linkage, Recombination, and Eukaryotic Gene Mapping	Reading: Chapter 7
5/28/14	Genetics of populations I	Reading: Chapter 25, <b>Problem set 6</b> <b>Online quiz 3: Chapters 6 , 7, 25</b>
5/29/14	Genetics of populations II	
		<b>Molecular Genetics</b>
6/2/14	DNA: The Chemical Nature Of the Gene; DNA Replication	Reading: Chapter 10 & 12.1 – 12.3, <b>Problem set 7 &amp; 8</b>
6/3/14	Transcription and RNA molecules	Reading: Chapter 13, Chapter 14 (sections 14.1 – 14.2) <b>Problem set 9</b> <b>Online quiz 4: Chapters 10, 12, 13</b>
6/4/14	RNA Processing; Catch up day and Review	Readings: Chapter 14 (sections 14.3 – 14.4), <b>Problem set 10</b>
6/5/14	<b>Exam 2</b>	<b>Material: Chapters 6, 7, 10, 12, 13, 25</b>
6/9/14	The genetic code and translation	Readings: Chapter 15 (pages 405 – 407, 410 – 421), <b>Problem set 11</b> <b>Online quiz 5: Chapters 14 – 15</b>
6/10/14	Control of Gene Expression in Prokaryotes	Reading: Chapter 16 (pages 431 – 446), <b>Problem set 12</b>
6/11/14	Control of Gene Expression in Eukaryotes	Reading: Chapter 17 (through 17.4), <b>Problem set 13</b>
6/12/14	Control of Gene Expression in Eukaryotes, continued	<b>Online quiz 6: Chapters 16 – 17</b>
6/16/14	Molecular genetic analysis and biotechnology	Reading: Chapter 19 (through 19.3), <b>Problem set 14</b>
6/17/14	Molecular genetic analysis and biotechnology, continued	
6/18/14	Catch up and Review	
6/19/14	<b>Exam 3</b>	<b>Material: Chapters 14 - 17, 19</b>