



PCB 3063

Genetics

Fall 2013



Course Description

This General Genetics course will cover eukaryotic and prokaryotic genetics. During the first half of the semester we will study Genetics through the classical and cytological approaches to learn about the principles of heredity and the behavior of genes. During the second half we will consider the molecular basis of heredity. We will study the structure and replication of nucleic acids as well as the mechanisms of gene expression and regulation. We will also discuss some experimental methods and their applications, ending with an introduction to biotechnology and forensic DNA analysis.

Instructor:

Dr. Walter Sotero-Esteve

Office: BL 301 E

e-mail: wsotero@ucf.edu

Phone #: 407-823-4848

Class Section: 0002 (84666)

Class Times & Room:

TuTh 1:30PM - 2:50PM, CB1 121

Instructor's Office Hours:

TuTh 12-1 PM, Fr 11 AM - 12 PM

Teaching Assistant: James Pursglove

Office hours: TuTh 10 - 11:30 AM

References

Textbook: Genetics: A Conceptual Approach, 4th edition, by Benjamin A. Pierce. Freeman, 2012. Available at the UCF Bookstore.

Website: <http://sotero.cos.ucf.edu/pcb3063>. All lecture notes with figures and all problem sets will be posted here as PPT or Word files. Students are strongly encouraged to bring printouts of the lecture PPT files to class.

Grading

There will be three regular exams plus a comprehensive final exam. These exams may include multiple-choice questions and problems. You will receive a score of 0 for any exam that you miss. Make-up exams may be given under special circumstances, but the instructor will ultimately decide the merit of each case. Exam scores will be posted at webcourses.ucf.edu. There will be no additional exams or assignments. The lowest of your *four* exam scores will be dropped and will not count toward your final grade. For example, if you take the first three exams and choose not to take the final exam, you will receive a score of 0 for the final exam but that score will be dropped and will not count toward your cumulative score. The following formula will be used to calculate your final cumulative score and grade: sum of your three highest exam scores/3. Results ending in .6 or a higher decimal round up to the next whole number. A standard curve will apply: 90-100: A, 80-89: B, 70-79: C, 60-69: D, 0-59: F.

Exam Schedule

Exam 1: September 19

Exam 2: October 24

Exam 3: November 26

Final Exam: December 10, 1-3 PM

Calendar and Schedule of Lecture Topics for the Fall 2013 Semester

The Fall 2013 semester begins on August 19th and ends on December 2nd.

There will be no class on November 29th.

<u>Topics</u>	<u>Book Chapters</u>
Mitosis and meiosis	2
Mendelian genetics	3
Sex determination	4
Extensions of Mendelian genetics	5, 24
Pedigree analysis	6
Non-Mendelian genetics	7
Population genetics	25
Bacterial and viral genetics	8
Nucleic acids and chromosome structure	10, 11
DNA replication	12
RNA molecules and transcription	13
Gene structure and RNA processing	14
The genetic code and translation	15
Gene regulation in prokaryotes and eukaryotes	16, 17
Recombinant DNA technology	19
Forensic DNA profiling	19

Attendance

Although the instructor will not keep record of student attendance, coming to the lectures is strongly encouraged. The lecture PPT files online do not include many notes and diagrams that will be presented in class. The topics to be discussed in class may not be limited to those found in the textbook, and not all sections from the reference book chapters will be covered in class. *Only the topics covered during class will be included in the exams.* If you arrive late on exam day, you will be allowed to take the exam but you will be required to finish by the scheduled time. However, *once the first student has finished the exam and left the room, no other students will be allowed in to begin the exam.* You may not have any visible communication devices with you during exams. Please maintain an updated profile at <https://ecommunity.ucf.edu/ecommunity/> that includes a knights.ucf.edu email address. The instructor may need to notify you by email in case of an emergency class cancellation or any schedule update.

Policy on Academic Conduct

As a UCF student, you are expected to follow the standards for conduct established by the University in the *Golden Rule Student Handbook*. No disruptive or distracting behavior is allowed during classes or exams. No form of disrespect to the instructor or to your classmates is tolerated. Promoting or engaging in academic dishonesty in any form (cheating, copying from neighbor, plagiarism, etc.) is not tolerated. Any form of disruptive behavior or academic dishonesty may result in judicial action, which could potentially result in expulsion from the University. At a minimum, violations of these rules may result in a record of the infraction being placed in your file. For more information, read about student rights and responsibilities and rules of student conduct in the *UCF Golden Rule* at <http://www.goldenrule.sdes.ucf.edu>.

Please show respect for the instructor and your classmates by arriving to class on time and by staying until class is over. As a courtesy to everyone in the classroom, please silence your phones or any other noise-making devices during lectures and exams.

The instructor has the ultimate authority to determine the correct interpretation of the contents of this syllabus.