



PCB 3063

Genetics

Fall 2015



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: Bio 202 B

e-mail: wsotero@ucf.edu

Phone #: 407-823-4848

Class Section: 0002 (83712)

Class Times & Room:

TuTh 1:30-2:45, CB1 121

Instructor's Office Hours:

TuTh 10:30-12:30

Teaching Assistant: *Andrew Dakkak*

Office hours: Tu 3-4 & We 1:30-3:30, Bio 202 B

References

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

Supplemental materials: all lecture notes with figures and all problem sets will be posted on webcourses.ucf.edu (the "Files" section of your PCB3063-15Fall 0002 course).

Grading and Exam Schedule

There will be three regular exams plus a comprehensive final exam. Exams may include multiple-choice questions and problems. Each exam will be worth 100 points. 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. All exam scores will be posted on webcourses.ucf.edu. 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 do not 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 final cumulative score. The following formula will be used to calculate your final cumulative score and grade: sum of your *three* highest raw exam scores/3. (Use the raw exam scores as posted on [webcourses](http://webcourses.ucf.edu), not the percentage scores.) Results ending in .6 or a higher decimal round up to the next whole number. The following grading scale will be applied: 90-100: A, 80-89: B, 70-79: C, 60-69: D, 0-59: F. The score of the the online Practice Quiz (see the "Attendance" section on page 2) will not count toward your final grade. There will be no additional exams or assignments.

Exam 1: September 29

Exam 2: October 29

Exam 3: December 3

Final Exam: December 15, 1-3 PM

Calendar and Schedule of Lecture Topics for the Fall 2015 Semester

The Fall 2015 semester begins on August 24th and ends on December 7th.

There will be no class on November 26th.

<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	9
Nucleic acids and chromosome structure	10, 11
DNA replication	12
Transcription	13
Gene structure, RNA molecules 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 and Academic Integrity

All faculty members are required to document students' academic activity at the beginning of each course. In order to comply, please take the **Practice Quiz** on Webcourses by January 16. *Failure to do so will result in a delay in the disbursement of your financial aid.*

Your instructor will not keep record of student attendance in class, but attending the lectures is strongly encouraged. The topics to be discussed in class may not be limited to those found in the textbook, and not all sections from the textbook chapters will be covered in class. *Only the topics covered in class will be included in the exams.* Please show respect for the instructor and your classmates by arriving on time to class and by staying until the lecture is over. As a courtesy to everyone in the classroom, please silence your phones and any noise-making devices during lectures and exams. All exams will be offered during regular class times, except for the final exam. If you arrive late on any 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. You may not use calculators that can store information. Please choose appropriately between right and left-handed desks.

As a UCF student, you are expected to follow the standards of conduct established in the *Golden Rule Student Handbook* (goldenrule.sdes.ucf.edu). No disruptive behavior or disrespect to the instructor or to your classmates is tolerated. Promoting or engaging in academic dishonesty in any form (*cheating* or *enabling cheating*) will be penalized. Do not write the answer letters on the side of the exam pages. This will be considered enabling cheating and will carry an automatic four-points deduction from your exam score. Any violations to the standards of conduct may result in judicial action, which could 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.

You are responsible for knowing all course rules and policies. The instructor has the ultimate authority to determine the correct interpretation of the contents of this syllabus.