



**PCB 3063**  
**Genetics**  
Spring 2014



**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 301 E  
e-mail: [wsotero@ucf.edu](mailto:wsotero@ucf.edu)  
Phone #: 407-823-4848

**Class Section:** 0001 (13918)

**Class Times & Room:**

MWF 10:30-11:20 AM, PSY 108

**Instructor's Office Hours:**

MW 11:30-1

**Teaching Assistant:** *James Pursglove*

Office hours: W 9-10:15 & F 11:30-1, Bio 301 E.

**References**

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

*Supplemental materials:* all lecture notes with figures and all problem sets will be posted on Webcourses as PPT or Word files. You may bring printouts of the lecture PPT files to class.

**Grading**

There will be four regular exams plus a comprehensive final exam. Exams may include multiple-choice questions and problems. Each exam will be worth 75 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. Exam scores will be posted at [webcourses.ucf.edu](http://webcourses.ucf.edu). There will be no additional exams or assignments. The lowest of your *five* exam scores will be dropped and will not count toward your final grade. For example, if you take the first four exams and choose not to take the final exam, you will receive a score of 0 for the final 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 four 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: January 31  
Exam 2: February 26

Exam 3: March 28  
Exam 4: April 21  
Final Exam: April 28, 10 AM

## Calendar and Schedule of Lecture Topics for the Spring 2014 Semester

The Spring 2014 semester begins on January 6<sup>th</sup> and ends on April 21<sup>st</sup>.

There will be no class on January 20<sup>th</sup> and March 3<sup>rd</sup> - 7<sup>th</sup>.

| <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

The instructor will not keep record of student attendance, 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 reference book chapters will be covered in class. *Only the topics covered during 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. Please maintain an updated profile at [ecomunity.ucf.edu](http://ecomunity.ucf.edu) that includes a [knights.ucf.edu](mailto:knights.ucf.edu) email address. The instructor may need to notify you by email in case of last minute cancellation or any schedule update.

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. You may not use calculators that can store information. Please choose appropriately between right and left -handed desks.

### Academic Integrity

As a UCF student, you are expected to follow the standards for conduct established by the University in the *Golden Rule Student Handbook* ([goldenrule.sdes.ucf.edu](http://goldenrule.sdes.ucf.edu)). 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 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 form of disruptive behavior or academic dishonesty 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.