

# PCB 3063

## Genetics

Spring 2005

### **Course Description**

This general genetics course will cover prokaryotic, eukaryotic, and viral genetics. During the first part of the semester we will study Genetics through the classical, cytological approach to learn about the behavior of genes. During the second part of the semester 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 at the transcriptional and post-transcriptional levels.

### **Instructor:**

Dr. Walter Sotero-Esteva  
e-mail: [wsotero@pegasus.cc.ucf.edu](mailto:wsotero@pegasus.cc.ucf.edu)  
Phone #: 407-823-4848  
Office: BL 301 E (Main Campus)  
Office hours: TR 10:30-12:30,  
or by appointment

**Class Time:** MW 4:30-5:45 PM

### **Live Origination:**

Main Campus (Orlando): CL1 320

### **2-Way Interactive TV:**

UCF Cocoa Campus: BC 255

UCF Palm Bay Center: PB3 208

UCF Daytona Campus: D140 206

UCF at South Lake: LAKE Non-R 309

### **References**

*Textbook:* Concepts of Genetics, 7<sup>th</sup> edition, by Klug & Cummings. Prentice Hall, 2003. Available at the university bookstore.

*Website:* <http://biology.ucf.edu/~wsotero/pcb3063>. All figures to be shown during lectures will be posted here as PPT files. Students are strongly encouraged to obtain printouts of these files prior to each lecture and bring them to class. The syllabus and all the exam scores will also be posted here as Word files.

### **Grading**

There will be three exams that will consist mostly of multiple-choice questions but may also include essay questions. Each exam will be worth 100 points for a total of 300 points. You should notify the instructor in advance if you will not be able to take an exam at the scheduled time. Make-up exams may be given under special circumstances, but the merit of each case will ultimately be decided by the instructor. There will also be an optional, all multiple-choice comprehensive final exam. Students who choose to take this final exam will be able to drop the lowest of four exam scores. The final exam should also be taken by any student who misses one of the regular exams.

The final grade will be based on the total score as a percentage of the 300 maximum score: 90-100%: A, 80-89%: B, 70-79%: C, 60-69%: D, below 60%: F.

### **Exam Schedule**

Exam 1: Feb 14

Exam 2: March 28

Exam 3: April 25

Final exam: May 2 (4 PM)

## **Attendance**

Although the instructor will not keep record of student attendance, attendance to the lectures is strongly encouraged. The topics to be discussed in class will not be limited to those found in the textbook. Unless otherwise indicated, only the material covered during class will be included in the exams.

## **Schedule of Topics for the Spring 2005 Semester**

<b><u>Topics</u></b>	<b><u>Book Chapters</u></b>
Mitosis and meiosis	2
Mendelian genetics	3, 4
Quantitative inheritance	5
Non-Mendelian genetics	6
Crossing over and mapping	6
Sex determination	7
Mutations	8
DNA: the genetic material	9
Structure of DNA	9
DNA replication	10
Gene structure in prokaryotes and eukaryotes	11, 19
The genetic code	12
Transcription	12
Translation	13
Protein function	13
Extranuclear inheritance	15
Bacterial and viral	16
Gene regulation in prokaryotes	17
Gene regulation in eukaryotes	21
Recombinant DNA technology	18-20

## **Policy on Academic Conduct**

All students attending for this course are expected to follow specific guidelines for conduct during lectures. Please arrive on time and avoid leaving before class is over. As a courtesy to everyone in the classroom, please turn off all cell phones, beepers, pagers, portable players, iPods, tape recorders, or any other noise-making devices during lectures and exams.

All exams will be offered during the regularly scheduled class time and room. All test papers and scantron sheets must be turned in by the scheduled end of the exam time. If you arrive late, you will be allowed to take the exam but you will be required to finish by the scheduled time. You may not have calculators, textbooks, notebooks, or anything other than pens, pencils, and erasers with you or on your desk during exams.

All students are expected to follow the standards for conduct established by the University of Central Florida in The Golden Rule (<http://www.ucf.edu/goldenrule/>). No disruptive or distracting behavior will be allowed during class or exams. No form of disrespect to the instructor or to classmates will be tolerated. Academic dishonesty (cheating, copying from neighbor, plagiarism, etc.) will be penalized. If you are found cheating you will receive a zero in the exam and you be reported to the student judicial system for disciplinary action. Any form of disruptive behavior or academic dishonesty may result in judicial action (see Student Responsibility section in The Golden Rule).