DEPARTMENT OF BIOLOGICAL SCIENCES, FLORIDA INTERNATIONAL UNIVERSITY
PCB 3063—Genetics—Spring 2017

Professor: Dr. Camila Granados-Cifuentes

Contacting me
Email: (spelling and characters DO matter!)
Office Phone: (only for urgent matters)
Office:

The best way to contact me is by email. Please include the course number and a clear topic in the subject line (for example, "ENV1020 cannot access Blackboard"). While the Internet allows us to send messages instantaneously, we are not always able to access our email in a similar fashion. My guarantee to you is that I will respond to you within 24-48 hours. If you don't hear back from me, please feel free to send a follow up email, except for holidays and days when the university is closed. If you have an emergency, you can contact me by phone. BUT, please be advised that if you leave a message, I will not receive it until I come for office hours the following Friday.

Office hours: Friday 9:30 a.m. – 1:30 p.m. If you cannot make it to these hours, please schedule for an appointment.

Required Lecture Text: Benjamin A. Pierce, Genetics: A Conceptual Approach, 6 ed. W. H. Freeman.
*****Additional reading may include scientific articles that will be posted on Blackboard in PDF format. These additional readings will be testable material on lecture exams!

The Macmillian for FIU sells a package for $90. This package includes the ebook and access to the online platform SaplingPlus. You **need access to Sapling Plus**, as 30% of your grade comes from activities done online.

Core Concepts
This course is divided into five core concepts after the Genetics Society of America list of core concepts and competencies:

- Nature of Genetic Material
- Transmission/Patterns of Inheritance
- Gene Expression and Regulation
- Evolution and Population Genetics
- Methods and Tools in Genetics

Learning Objectives
The course has the goal of providing a strong foundation for examining, analyzing, and addressing genetics. Based on the Genetics Society of America core concepts and competencies, the course has the following learning outcomes:

1. Students will be able to describe how the DNA is organized.
2. Students will be able to identify the molecular components and mechanisms necessary to preserve to copy and duplicate a genome.
3. Students will be able to explain the mechanisms by which an organism's genome is passed to the next generation.
4. Students will be able to discuss Mendel's principles of inheritance and apply them to problems of inheritance.
5. Students will be able to interpret pedigrees and distinguish between dominant, recessive, autosomal, X-linked, and cytoplasmic modes of inheritance.
6. Students will be able to distinguish the phenomenon of linkage disequilibrium and its effect on the assortment of alleles during meiosis.
7. Students will be able to explain how gene expression can be altered, including without change in the DNA sequence.
8. Students will be able to calculate allele frequencies based on genotypic and phenotypic data and predict Hardy-Weinberg equilibrium.
9. Students will be able to describe how evolution occurs through genetic changes and reconstruct the evolutionary history of organisms.
10. Students will be able to discuss some of the causes associated with cancer.
11. Students will be able to distinguish the different technological advances used in the field of genetics.

Online/Blackboard/SaplingPlus

- Course weeks will begin on **Monday** and end on **Friday** (unless otherwise noted).
- Summarized lecture presentations, videos, and/or other material will be posted on Friday of each week. You will be able to find them in Content and organized by folders. The names of the folders will be according to the week number, chapter, and topic (e.g. "Ch. 3, Basic Principles of Genetics"). Additional readings required for a particular week will also be in this folder.

- You should come to class prepared by reading the corresponding assigned readings ("Ch" refers to chapter from the requested book).
- Complementary resources will be available in a folder in Contents named "Complementary resources".
- Please set aside a little bit of time these first days of the semester to familiarize with the organization of the course in Blackboard and Macmillian SaplingPlus.

Expectations students can have for instructor: I grade soon after submission or collecting assignments or tests. Therefore, for in-class assignments you can expect to see your grades on Blackboard within the following 24-72 hours. In the case of assignments, quizzes, and other activities done online, you will be able to see your grade and feedback at the following *course week*, unless otherwise indicated. I will be accessing Blackboard frequently, so you can expect to "see" me online as well. However, I also follow FIU's academic calendar. Therefore, I reduce my online access, grading, replying emails, etc. when the college is closed and holidays.

Class attendance: You are expected to come prepared and participate actively in class. This means doing the reading and writing assignments *before* class, being willing to contribute to class discussion and participate in the activities carried out in class. Classes will consist of lectures, in-class assignments, and discussions. In-class assignments will be collected and graded. Class assignments count for 15% of your grade. Absences should only be for illnesses and family emergencies. In the case of missed lecture days or impending absences, you are responsible for obtaining lecture notes and in-class announcement information from fellow classmates.

You can expect iClicker questions in every lecture. This will help all of us asses your understanding of the topic being covered. It is your responsibility to bring your Clicker to class.

Grades: The table below shows the activity types contained within this course and the assigned percentage to determine the final course grade.

Activity Types	Percentage
Exams (5 and the lowest grade is dropped, so 4 at 10%)	40%
Homework Online Assignments	10%
In-class Activities	15%
Online Quizzes on SaplingPlus (lowest grade is dropped)	20%
Final Exam, cumulative	15%
TOTAL	**100%**

Letter grades for the course will be based on the following grading scale:

A	90-100		
B+	86-89	B	80-85
C+	76-79	C	70-75
D	60-69		
F	<59		

Note: These ranges are subject to change.
There is no make up for missed in-class assignments.
There are no make up exams.
Do not arrive late to exams. If you arrive after a student finishes an exam or after, you will not be allowed to take the exam.

Miscellaneous Information

- **Academic Grievances**

I attempt to provide excellent instruction in a manner that is fair to all students. However, if you believe that you have not been dealt with fairly or that instruction has been inadequate, procedures exist for handling grievances.
First, speak with me!! Perhaps I am unaware that a problem exists. Speaking with me may provide a satisfactory explanation to resolve the problem or make adjustments to accommodate special needs.
Second, if the problem is not or cannot be resolved with me, speak with the department head or chair person.
Finally, if the problem still cannot be resolved, speak with the Dean of Students.

Florida International University is a community dedicated to generating and imparting knowledge through excellent teaching and research, the rigorous and respectful exchange of ideas, and community service. All students should respect the right of

others to have an equitable opportunity to learn and to honestly demonstrate the quality of their learning. Therefore, all students are expected to adhere to a standard of academic conduct, which demonstrates respect for themselves, their fellow students, and the educational mission of the University. All students are deemed by the University to understand that if they are found responsible for academic misconduct, they will be subject to the Academic Misconduct procedures and sanctions. Academic Misconduct policies and procedures will be strictly enforced regarding cheating. Anyone caught cheating will be asked to leave the class, will be given an "F" for the whole course and a petition will be sent to Academic Affairs. NO EXCEPTIONS.

- **Accommodation**

The Disability Resource Center collaborates with students, faculty, staff, and community members to create diverse learning environments that are usable, equitable, inclusive and sustainable. The DRC provides FIU students with disabilities the necessary support to successfully complete their education and participate in activities available to all students. If you have a diagnosed disability and plan to utilize academic accommodations, please contact the Center at 305-348- 3532 or visit them at the Graham Center GC 190.

Please visit the ADA Compliance webpage for information about accessibility involving the tools used in this course. Please visit Blackboard's Commitment Accessibility webpage for more information.

For additional assistance please contact FIU's Disability Resource Center.

- **Cell Phones**

The ringing of cell phones can be very distracting in the classroom; therefore, all cell phones should be turned off during our face-to-face periods. You are not allowed using your cell phones during the class period for personal matters. If there is a personal circumstance that warrants you leaving your cell phone on during class, talk to me before class.

Cheating and plagiarism are serious offenses.

Good luck in your course

**** I reserve the right to modify this syllabus as needed**

Week	Dates	Topic	Reading	Online Assessments Deadlines. They are due through SaplingPlus, unless otherwise noted (*time due is 11:59pm EST of the deadline date)
01	Jan 9–13	Course introduction Introduction to Genetics DNA: The Chemical Nature of the Gene Chromosome Structure and Organelle DNA	Syllabus Ch 1 Ch 10 Ch 11	- **Quiz 1** (Ch1, 10, 11) due F | Jan 13*
02	Jan 16–20	**M | Jan 16 - No class in observance of MLK (University closed)** Chromosomes and Cellular Reproduction DNA Replication and Recombination Gene	 Ch 2 Ch 12	- **Homework 1** (Ch2, 12) due W | Jan 18* (notice assignment is due Wednesday) - **Quiz 2** (Ch2, 12) due F | Jan 20*
03	Jan 23–27	Mutations and DNA Repair Chromosome Variation	Ch 18 Ch 8	- **Homework 2** (Ch18, 8) due M | Jan 23* - **Quiz 3** (Ch18, 8) due F | Jan 27*
04	Jan 30–Feb 3	**M | Jan 30 Exam 1 (Ch 1, 10, 11, 2, 12, 18, 8)** Basic Principles of Heredity	 Ch 3	- **Homework 3** (Ch3) due W | Feb 1* (notice assignment is due Wednesday) - **Quiz 4** (Ch3) due F | Feb 3*
05	Feb 6–10	Sex Determination and Sex-Linked Characteristics	Ch 4	- **Homework 4** (Ch4) due M | Feb 6* - **Quiz 5** (Ch4) due F | Feb 10*
06	Feb 13–17	Extensions and Modifications of Basic Principles	Ch 5	- **Homework 5** (Ch5) due M | Feb 13* - **Quiz 6** (Ch5) due F | Feb 27*
07	Feb 20–24	**M | Feb 20 Exam 2 (Ch 3, 4, 5)** Pedigree Analysis, Applications, and Genetic Testing	 Ch 6	- **Homework 6** (Ch6) due W | Feb 22* (notice assignment is due Wednesday) - **Quiz 7** (Ch6) due F | Feb 24*
08	Feb 25–Mar 3	Linkage, Recombination, and Eukaryotic Gene Mapping	Ch 7	- **Homework 7** (Ch7) due M | Feb 25* - **Quiz 8** (Ch7) due F | Mar 3*
09	Mar 6–10	**M | Mar 6 Exam 3 (Ch 6, 7)** The Genetic Code and Translation	 Ch 15	- **Homework 8** (Ch15) due W | Mar 8* (notice assignment is due Wednesday) - **Quiz 9** (Ch15) due F | Mar 10*
10	Mar 13–18	**Spring Break (no classes – University open)**		
11	Mar 20–24	Control of Gene Expression in Eukaryotes Epigenetics	Ch 17 Ch 21	- **Homework 9** (Ch17, 21) due M | Mar 20* - **Quiz 10** (Ch17, 21) due F | Mar 24*
12	Mar 27–31	**M | Mar 27 Exam 4 (Ch 15, 17, 21)** Population Genetics	 Ch 25	- **Homework 10** (Ch25) due W | Mar 27* (notice assignment is due Wednesday) - **Quiz 11** (Ch25) due F | Mar 31*
13	Apr 3–7	Evolutionary Genetics	Ch 26	- **Homework 11** (Ch26) due M | Apr3* - **Quiz 12** (Ch26) due F | Apr 7*

14	Apr 10–14	Molecular Genetic Analysis and Biotechnology Cancer Genetics	Ch 19 Ch 23	- **Homework 12** (Ch19, 23) due M | Apr 10* - **Quiz 13** (Ch19, 23) due F | Apr 14*
15	Apr 17–21	**M | Apr 17 Exam 5 (Ch 25, 26, 19, 23)** Review		
16	Apr 24–29	**Finals Week: Final exam is cumulative**		