

Syllabus: PCB 3063 Genetics
Term: Fall 2009

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Objective: The objective is to expand your basic knowledge and understanding of genetics. This course will cover critical thinking skills, the basics principles DNA replication, recombination, chromosomal variations, heredity and population genetics, etc. by introducing concepts from viral, prokaryotic and eukaryotic model systems.

This class will be presented as modules of information. Pre- and post- self-assessments will be taken at the beginning and end of each module. The self-assessments will be part of the quiz and attendance grade.

GOAL: To teach critical thinking using a conceptual approach to learning. Emphasis will NOT be on memorization but teaching the student to tie the overall concepts and detailed facts together as they are intimately related to each other.

TENTATIVE Syllabus/schedule
Subject to change

Week of:	Subject	Assigned Chapters to read
Aug 25-27	Syllabus, grading, etc.; <i>Module I: introduction to genetics; review of cell biology & structure</i>	1,2
	Cell cycle, mitosis	2
Sep 1-3	Meiosis	2
	<i>Module II: DNA: a review; genetic code, chromosomes</i>	9, 10, 11, 12
Sep 8-10	DNA replication	10, 12
	DNA replication	10, 12
Sep 15	First exam: Modules I-II (through DNA replication & recombination)	
Sep 17	<i>Module III: RNA, Proteins, Expression</i>	13, 14, 15, 16, 17
Sep 22-24	RNA, transcription	13, 14
	Translation, proteins	15
Sep 29	Gene Expression, prokaryotes	16
Oct 1	Gene Expression, eukaryotes	17
Oct 6-8, 13	Gene Expression, RNAi	14, 16, 17
	Gene Expression, RNAi continued	
Oct 15	Second exam Module III (RNA, etc)	
Oct 20-22	<i>Module IV: Transmission genetics</i>	3

	Mendelian genetics; Punnett Squares	3
Oct 27-29	Chi Square problems	3
	Linkage & Mapping	7
Nov 3-5	Heredity & linked characters	4,5
Nov 10-12	Mutation and gene repair	18
	Pedigree analyses; Population genetics brochure assignment; Due NOV 30th	6
Nov 17-19	Evolution genetics	25
Nov 24	Third exam: Module IV	
Dec 1-4	Review; presentation of top 5 brochures for extra credit	
	FINAL EXAM	TBA

This will be a CE 6.0 assisted course and various materials will be posted throughout the semester. Pop quizzes will occasionally be given at the beginning of any lecture class to insure (a) you have read the materials assigned and (b) to take attendance. Other reading assignments and homework will be given periodically and will count toward the participation grade.

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Exams & grading

Three exams of equal value and a cumulative final exam (required) will be given throughout the semester.

You may drop your lowest grade of the three in-semester exams

No make-up exams will be given!

FINAL IS NOT OPTIONAL! It is cumulative

Grades will be calculated as follows:

Two (of 3) Exams	60%
Final Exam (required)	25%
Participation: Self-assessment, Quizzes, attendance, other assignments	15%

The final grade will be calculated based on the following scale:

93-100	A
90-92	A-
88-89	B+
83-87	B

80-82	B-
78-79	C+
73-77	C
70-72	C-
68-69	D+
63-67	D
60-62	D-
59 or below	F

Academic Misconduct:

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 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, as outlined in the Student Handbook.

**Academic Misconduct: Full handbook and information can be found at:
<http://www.fiu.edu/~oabp/misconductweb/1acmisconductproc.htm>**

DEFINITION OF ACADEMIC MISCONDUCT: Academic Misconduct is defined as the following intentional acts or omissions committed by any FIU student:

1.01 Cheating: The unauthorized use of books, notes, aids, electronic sources; or assistance from another person with respect to examinations, course assignments, field service reports, class recitations; or the unauthorized possession of examination papers or course materials, whether originally authorized or not. Any student helping another cheat may be found guilty of academic misconduct.

1.02 Plagiarism: The deliberate use and appropriation of another's work without any indication of the source and the representation of such work as the student's own. Any student who fails to give credit for ideas, expressions or materials taken from another source, including internet sources, is guilty of plagiarism. Any student helping another to plagiarize may be found guilty of academic misconduct.

1.08 *Academic Dishonesty:* In general, by any act or omission not specifically mentioned above and which is outside the customary scope of preparing and completing academic assignments and/or contrary to the above stated policies concerning academic integrity.

If found cheating, YOU WILL RECEIVE AN “F” FOR THE CLASS, NO EXCEPTIONS.

Text book: Genetics: A Conceptual Approach, Third Edition:

The required textbook for this course is Pierce, *Genetics: A Conceptual Approach*, 3rd Edition. There is a very helpful free Web site to accompany the book at www.whfreeman.com/pierce2e. This site from the publisher has activities and animated tutorials for the more challenging concepts from the text.

The textbook can be considered your basic reference book. Other sources will be used for the lectures as well. All information you may need for tests will come from lecture, your book or other required readings.

Other reading assignments and/or homework assignments will be posted on CE 6.0 throughout the semester. You will be responsible for these as well and can be used as testing material.