

**PCB 3063-GENETICS**  
**SECTION 2C92, SPRING 2016, 4 CREDITS**

**Instructor:** Dr. Mi-Jeong Yoo, Department of Biology  
**Office:** CGRC room 437 (2033 Mowry road)  
**Office hours:** Thursday 10am-12pm, or by appointment  
**Email:** [ymj@ufl.edu](mailto:ymj@ufl.edu)

**Class Meetings:** Tuesday and Thursday, Periods 9-10 (4:05-6:00pm) in 0101 Ustler Hall

**Course Description:**

PCB3063 is a challenging and stimulating course covering genetics from Mendel to the present. The class provides a solid foundation in genetics as a stand-alone course as well as a prerequisite to other genetics classes offered on campus. Topics to be covered include transmission, molecular, and population genetics. The course emphasis is on problem solving and conceptual synthesis.

**Email Policy:**

All e-mail correspondence to course instructors must **originate from your ufl.edu account, have your full name in the body of the e-mail, and contain your course in the subject line**. E-mails not meeting these requirements may not be recognized by my e-mail filters, and thus may not be answered.

**Textbook:**

*Concepts of Genetics* by Klug et al., 11<sup>th</sup> edition, 2014, Pearson [ISBN: 9780133865363]  
Bundled package includes textbook: *Concepts of Genetics* ALC and Student's Handbook and Solutions manual

**Course website:**

Class material including the syllabus, exam results, some lecture slides, and other information related to the course will be posted on the course e-Learning website (<http://lss.at.ufl.edu>). The course is found under "e-Learning in Canvas". You are responsible for all announcements made in lecture and/or posted on the course website for this class. For help with e-Learning, call the UF Computing Help Desk at 352-392-4357, or visit the e-Learning support website: <https://lss.at.ufl.edu/help.shtml>.

**General Policies:**

Attendance is not required, but students are expected to attend all classes and are responsible for all material covered during the lecture, including announcements. Students are strongly encouraged to read the assigned chapters before coming to class as this will make it easier to comprehend the lecture material. If you miss class, visit the e-Learning site for any lecture notes and course announcements.

Please do not request individual special treatment regarding grading at the end of the semester; we do not adjust grades for individuals for any reason. Plan to do well on all exams and other assessments from

the beginning of the semester; if you are having difficulty in the class, please let me know before the exams rather than after.

**Grading:**

Exam I	100
Exam II	100
Exam III	100
10 Problem Sets	100
<u>Class Project</u>	<u>100</u>
Total	500

- Regrades must be requested in writing, and be taken within 7 days of return of exam.
- **No make-up exams will be given without prior permission or documentation of illness.** In case of illness, a letter from your primary care provider is required. A personal matter requires a note from the Dean of Students (P202 Peabody Hall). **Make up exams may be given in an essay format.**
- Minimum grade cutoffs are listed below. These cutoffs will not be raised; in other words, if you receive 90% of the possible points, you are guaranteed to earn an A grade. A curve may be applied to individual exams or to the final scores, depending on the class average, and will be communicated clearly. However, we will not adjust grades on an individual basis.

Point Range (%) <sup>1</sup>	Letter Grade <sup>2</sup>
≥ 90.00 <sup>1</sup>	A <sup>2</sup>
≥ 86.66 <sup>1</sup>	A- <sup>2</sup>
≥ 83.33 <sup>1</sup>	B+ <sup>2</sup>
≥ 80.00 <sup>1</sup>	B <sup>2</sup>
≥ 76.66 <sup>1</sup>	B- <sup>2</sup>
≥ 73.33 <sup>1</sup>	C+ <sup>2</sup>
≥ 70 <sup>1</sup>	C <sup>2</sup>
≥ 66.66 <sup>1</sup>	C- <sup>2</sup>
≥ 63.33 <sup>1</sup>	D+ <sup>2</sup>
≥ 60 <sup>1</sup>	D <sup>2</sup>
≥ 56.66 <sup>1</sup>	D- <sup>2</sup>
< 56.66 <sup>1</sup>	E <sup>2</sup>

Note that the current UF policy for assigning grade points is available at the following undergraduate catalog web page: <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>.

**Academic Honesty:**

All students registered at the University of Florida have agreed to comply with the following statement:

*"I understand that the University of Florida expects its students to be honest in all their academic work. I agree to adhere to this commitment to academic honesty and understand that my failure to comply with this commitment may result in disciplinary action up to and including expulsion from the University."*

In addition, on all work submitted for credit the following pledge is either required or implied:

*"On my honor I have neither given nor received unauthorized aid in doing this assignment."*

If you witness any instances of academic dishonesty in this class, please notify the instructor or contact the Student Honor Court (392-1631) or Cheating Hotline (392-6999). For additional information on Academic Honesty, please refer to the University of Florida Academic Honesty Guidelines at: <https://catalog.ufl.edu/ugrad/current/advising/info/student-honor-code.aspx#honesty>.

**Accommodations for Students with Disabilities:**

Students who will require a classroom accommodation for a disability must contact the Dean of Students Office of Disability Resources, in Peabody 202 (phone: 352-392-1261). Please see the University of Florida Disability Resources website for more information at: <http://www.dso.ufl.edu/drc/>. Note that the student should provide documentation of a requirement for accommodation **by the second week of classes**. No accommodations are available to students who lack this documentation. It is the policy of the University of Florida that the student, not the instructor, is responsible for arranging accommodations when needed. Once notification is complete, the Dean of Students Office of Disability Resources will work with the instructor to accommodate the student.

**Counseling and Wellness Center:**

Many students experience test anxiety and other stress related problems. The University's Counseling and Wellness Center (<http://www.counseling.ufl.edu/cwc/Default.aspx>, 392-1575) offers a diverse array of support systems. In an emergency, students should contact the University Police Department: 392-1111 or 9-1-1.

**Online Course Evaluations:**

Students are expected to provide feedback on the quality of instruction in this course based on 10 criteria. These evaluations are conducted online at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results>.

### Lecture schedule

NOTE: The following schedule is **tentative**; lecture topics and coverage may change. Updated schedule and specific reading assignments will be posted on the course website throughout the semester

Week		Topic	Chapters
<b>1</b>	January 5	DROP/ADD-NO CLASS	
	January 7	Introduction to course and Genetics	1
<b>2</b>	January 12	Mitosis and meiosis	2
	January 14	Mendelian Genetics	3
<b>3</b>	January 19	Extensions of Mendelian Genetics	4
	January 21	Chromosome Mapping in Eukaryotes	5
<b>4</b>	January 26	Sex determination and Sex Chromosomes	7
	January 28	Extranuclear Inheritance	9
<b>5</b>	February 2	Problem solving session	
	February 4	<b>EXAM I</b>	
<b>6</b>	February 9	DNA Structure and Analysis	10
	February 11	DNA Replication and Recombination, Organization	11, 12
<b>7</b>	February 16	Transcription	13
	February 18	Translation	14
<b>8</b>	February 23	Regulation of Gene Expression in Prokaryotes	16
	February 25	Regulation of Gene Expression in Eukaryotes	17
<b>9</b>	March 1	SPRING BREAK-NO CLASS	
	March 3		
<b>10</b>	March 8	Developmental Genetics	18
	March 10	Cancer and Regulation of Cell Cycle	19
<b>11</b>	March 15	<b>EXAM II</b>	
	March 17	Recombinant DNA Technology	20
<b>12</b>	March 22	Genomics, Bioinformatics, and Proteomics	21
	March 24	Applications and Ethics of Genetic Engineering	22
<b>13</b>	March 29	Quantitative Genetics and Multifactorial Traits	23
	March 31	Population and Evolutionary Genetics	25
<b>14</b>	April 5	Epigenetics, Emerging Roles of RNA	Special Topics 1, 2
	April 7	DNA Forensics, Genomics and Personalized Medicine	Special Topics 3, 4
<b>15</b>	April 12	Genetically Modified Food, Gene Therapy	Special Topics 5, 6
	April 14	Project presentation I	
<b>16</b>	April 19	Project presentation II	
	April 21	<b>EXAM III</b>	

**Class Project: "Genetics, Technology, and Society"**

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Chapter	Topic
4	Improving the Genetic Fate of Purebred Dogs
6	From Cholera Genes to Edible Vaccines
7	A Question of Gender: Sex Selections in Humans
9	Mitochondrial DNA and the Mystery of the Romanovs
11	Telomeres: The Key to Immortality?
13	Nucleic Acid-Based Gene Silencing: Attacking the Messenger
13	Fighting Disease with Antisense Therapeutics
16	Quorum Sensing: Social Networking in the Bacterial World
18	Stem Cell Wars
22	Personal Genome Projects and the Race for the \$1000 Genome
22	Privacy and Anonymity in the Era of Genomic Big Data
23	The Green Revolution Revisited: Genetic Research with Rice
25	Tracking Our Genetic Footprints out of Africa
26	Gene Pools and Endangered Species: The Plight of the Florida Panther

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