

**PCB 3063, GENETICS, Spring 2023,  
SECTION 4462**

**Instructor:** Dr. Edward L. Braun, Department of Biology, 514 CRR  
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**Graduate TAs:**

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Addition TAs TBA

Course website: UF e-learning

**Text:** Klug et al. 2018 Concepts of Genetics, 12th ed. Pearson, New York. (available as e-book through Canvas)

Schedule: T R, periods 3 and 4 (9:35 - 11:30), CSE A101

**Course Description:**

PCB 3063 is an introduction to genetics course covering topics from Mendelian genetics to molecular biology and genomics. The class will provide students with a solid foundation in genetics either as a stand-alone course or as a prerequisite to other life sciences courses offered on campus. The course emphasis is on problem solving and conceptual synthesis. Course performance will be measured by three exams and a class project (details in class).

**Course Objectives:**

Upon completion of this course students will have built core knowledge of the field of genetics, including both mendelian and molecular genetics. Students will be able to use this core knowledge to analyze scientific literature and make connections within and between other life-sciences coursework.

**Email Policy:**

All email correspondence must be from your ufl.edu account, have your full name in the body of the email, and contain your course and section number in the subject line. Emails not meeting these requirements may not be recognized by my email filters, and thus may not be answered.

**Grading:**

- There will be three exams, each worth 100 points, and your grade will be the average of those three exams (unless you complete the available extra credit, see below).
- The format of in class exams will be free response. Although I may include a small number of multiple choice or true/false questions this will NOT be the format for most questions.
- There will not be a final and the individual exams are not cumulative *per se*. However, we will

build on concepts throughout the year and tests may include concepts presented before the previous exam if they relate to later material (e.g., if material presented before exam I is directly relevant to a specific topic on exam II that material may appear on exam II).

- Practice problems will be assigned, but not graded.
- There is extra credit in the form of a class project available and I expect most (or all) of you to take advantage of that extra credit opportunity. No other extra credit will be available.
- Regrades must be requested in writing and be taken within 7 days of posting of the exam key.
- **Make-up exams will NOT be given without prior permission or documentation of illness.** In general, I will use my discretion. In case of illness, a letter from your primary care provider will typically be required. I will also use discretion for personal matters, but you can get a note from the Dean of Students (P202 Peabody Hall) if you are worried. **Although make-up exams will typically be the same format, I reserve the right to change the make-up exam format if I feel it is appropriate.**

- Attendance in class is not required, but material covered only in lecture may appear on exams.

- Grading will be on a percent scale.

93 – 100%	A
90 – 92.9%	A-
87 - 89.9%	B+
83 – 86.9%	B
80 – 82.9%	B-
77 – 79.9%	C+
73 – 76.9%	C
70 – 72.9%	C-
67 – 69.9%	D+
63 – 66.9%	D
60 – 62.9%	D-
<60	E

- Although I am unlikely to do so, I reserve the right to adjust the details of this percent scale. However, any adjustments will not increase any grade cut-offs. In other words, if you have a score  $\geq 93\%$  you can count on an A, if you have a score  $\geq 90\%$  you can count on receiving at least an A-, etc.

- A “curve” may be applied at my discretion. Although I will typically apply curves to individual exams. I used scare quotes when I first used the term curve because the form of the curve is simply some number of points added to the score. Thus, there is no attempt to force the grades into some specific distribution (e.g., a normal distribution). This is to your advantage for two reasons: 1) the curve can only raise your grade, never decrease it; and 2) you are not competing with other students in any way. The details of the curve are at my discretion.

- Typically, the curve will take the form of adding the following number of points: take the maximum score possible (100 points), subtract the maximum score that any student

achieved, and then add that number of points to all tests. However, I reserve the right to use other curving strategies. Alternative strategies will typically be used to avoid cases where an individual student is a “curve buster.” In other words, if we imagine an exam where the maximum score is 100 but the next best score is much lower (e.g., 92) then I will probably add some curve, even though the maximum score achieved was 100.

- The maximum possible score on any exam will be 100 points. If I apply a curve that increases any student’s score above 100 points, then that student will receive a score of 100.
- The extra credit will be up to 100 points and your final score awarded according to the following equation:

If you do NOT complete the extra credit work:

$$\text{(Equation 1) Class Score} = (\text{exam I} + \text{exam II} + \text{exam III}) / 300$$

If you complete the extra credit work:

$$\text{(Equation 2) Class Score} = (\text{exam I} + \text{exam II} + \text{exam III} + \text{extra credit}) / 400$$

- The extra credit will include a group project to make a poster based on an assigned paper. Your group will also be assigned.
- I reserve the right to add extra credit assignments. However, the total number of extra credit points will be 100.
- Although this is unlikely, your score will be the maximum of equations 1 and equation 2. In other words, if you do the extra credit but perform poorly, I will simply use equation 1. As I stated, this is very unlikely. I score the extra credit work in a manner that is almost guaranteed to improve your grade (fundamentally, to miss the extra credit points you would have to start the extra credit assignment and then “blow it off”).
- I view your performance on exams as your “core grade.” The extra credit is simply a way to give you additional learning opportunities that can help your grade.
- Please see <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx> for other information regarding UF’s policy for assigning grade points.

### **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:

<http://www.dso.ufl.edu/judicial/procedures/academicguide.html>.

### **Accommodations for Students with Disabilities:**

Students with disabilities who require accommodations should first seek assistance at the Dean of Students Office of Disability Resources, in Peabody 202 (phone: 352-392-1261). The Dean of Students Office of Disability Resources will work with the instructor to accommodate the student. Please see the University of Florida Disability Resources website for more information at: <http://www.dso.ufl.edu/drp/services/>.

### **Counseling Center:**

Many students experience test anxiety and other stress related problems. “A Self Help Guide for Students” is available through the Counseling Center (301 Peabody Hall, 392-1575) and at their website: <http://www.counsel.ufl.edu/>

### **Other Information:**

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

### **Pre-exam review sessions:**

TBA. I typically use some in class time prior to exams to review various topics.

### **In-Class Recording:**

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor. A “class lecture” is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session. Publication without permission of the instructor is prohibited. To “publish” means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring

services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.

**Syllabus is subject to change.** The posted exam dates will only be changed under the most extreme conditions. The dates of the poster sessions (the class project) will very likely be adhered to, but I reserve the right to adjust them if necessary. Other topics should be considered tentative!! Date changes for anything that will directly affect your grade will be announced in advance and as early as possible.

**Schedule of Topics**

Week	Topic	Read:	Suggested Problems	Subtopics
1	Transmission Genetics I	CH 2/3	<b>TBA</b>	Genetics Introduction; mitosis & meiosis; Mendelian genetics: Punnett squares & probability
2	Transmission Genetics I	CH 3	<b>TBA</b>	Mendelian genetics: Punnett squares & probability,
	Transmission Genetics II	CH 4		Extensions of Mendelian genetics.
3			<b>TBA</b>	
	Transmission Genetics II	CH 4/5		Extensions of Mendelian Genetics; Linkage mapping
4			<b>TBA</b>	
	Transmission Genetics II	CH 6		Microbial Genetics
	Transmission Genetics III	CH 7		Sex Determination
5			<b>TBA</b>	
	Chromosomes	CH 8		Chromosome Variation <b>EXAM I</b>
6			<b>TBA</b>	
	Molecular Genetics I	CH 10-12		DNA: the genetic material; replication & recombination; chromatin structure
	Molecular Genetics I	CH 10-12		
7			<b>TBA</b>	
	Molecular Genetics II	CH 13		RNA/Transcription
		CH 14		Translation
8			<b>TBA</b>	
	Molecular Genetics II	CH 15		DNA Repair
	Molecular Genetics III	CH 16		Regulation of Gene expression: Prokaryotes
9			<b>TBA</b>	
	Molecular Genetics III/IV	CH 16/17		Regulation of gene

CH 17

10	Molecular Genetics V	CH 18	<b>TBA</b>	Post Transcriptional Regulation <b>EXAM II</b>
11	Molecular Genetics V	CH 19 CH 20-22	<b>TBA</b>	Epigenetics Biotechnology/Genomics
12	Genomics	CH 20-22	<b>TBA</b>	Biotechnology/Genomics
13	Molecular Genetics VI	CH 23	<b>TBA</b>	Developmental Genetics
	Molecular Genetics VII	CH 24		Cancer Genetics
	Transmission Genetics IV	CH 25		Quantitative Genetics
14	Transmission Genetics IV Class Project Presentations	CH26	<b>TBA</b>	Pop. and Evol. genetics
15	Class Project Presentations			<b>EXAM III</b>