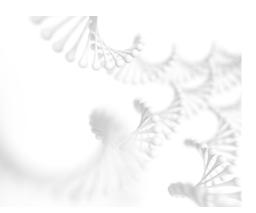
PCB3063 Genetics Fall 2024 Section 15FG

I. Class Meetings Little Hall 0101. T & R 8:30 am - 10:25 am

II. Instructor:

Zhanar Abil, Department of Biology Phone: (352)-846-3781 Office: Wertheim Lab Eng Exc Room 487 Office Hours: Monday 3-4 pm and Wednesday 11-12 am or by appointment at <u>abilz@ufl.edu</u>. Please request appointments at least 1 business day in advance.

Graduate TAs: Arindam Sarkar, Office: 122 Bartram Hall Email: <u>arindam.sarkar@ufl.edu</u> Office Hours: Monday 2-3 pm or by appointment



Julian Correa Narvaez, Office: Dickinson Courtyard (my office is Dickinson 210 but it is closed off and shared) Email: <u>j.correanarvaez@ufl.edu</u> Office Hours: Mon/Wed 10-11:30 or by appointment

III. Course Description

PCB 3063 is an intensive 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 12 pre-lecture assignments (2 with lowest scores dropped), 12 homework assignments (2 with lowest scores dropped), 1 course project (group presentation), 4 exams (1 dropped), and in-class participation.

We will have many assignments and problems that will assist you in learning the material, attaining greater understanding and higher grades. Each module has associated graded assignments, intentionally designed to promote hands-on learning. My recommended strategy for success is: 1) Read the textbook chapter, 2) Complete pre-lecture assignments 3) Attend and participate during lecture 4) Work through homework assignments 5) Review all the materials weekly.

Each student is solely responsible for reading and following the instructions, guidelines and schedules in this syllabus. Not having read the information in this syllabus or in instructor announcements will not constitute an excuse for missing an assignment, exam, or other assessment.

IV. Course Objectives:

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

V. E-mail Communication

All e-mail correspondence to course instructors **<u>must originate from your ufl account and have</u> <u>your full name in the body of the e-mail</u>**. E-mails not meeting these requirements may not be recognized by our e-mail filters, and thus may not be answered.

VI. Course Resources

A. Textbook – *Concepts of Genetics*, 12th Edition, William S. Klug, Pearson Education, Inc. (publisher), with *MasteringGenetics* online learning system.

One physical copy of 12th and 11th editions each are put on Course Reserves and will be available to loan for 2 hours from Marston Science Library.

B. Online Resources and Electronic Textbook - This course will be participating in the UF All Access program. Login at the following website and Opt-In to receive your required Pearson code. which will be used register from within access to Canvas - https://www.bsd.ufl.edu/G1CO/IPay1f/start.aspx?. Follow the UF All Access Student Instructions. Any code obtained outside of UF All Access will not work for the course. When setting up your account, you must use your Gatorlink (@ufl.edu) e-mail address. Next, register for Mastering Genetics using your access code.

- 1. Sign into Canvas and enter your Canvas course.
 - 2. Do one of the following: Select any Pearson link from any module.
 - OR Select an Access Pearson link in the Course Navigation.
 - 3. Next, select OpenMyLab and Mastering or a content link.

Never use temporary access because all work will be lost when you purchase Mastering Genetics.

From the You're Done page, select Go to My Courses.

Note: We recommend you **always enter Mastering Genetics through Canvas.** Also, it is recommended that you use **Google Chrome** as your browser and **turn off pop-up blockers** when doing assignments in Mastering to avoid issues.

For help with All Access registration, email: <u>allaccess@bsd.ufl.edu</u>

For help with the Pearson site, contact their Technical Support. Contact information and support hours will be posted on the Canvas webpage for the course. https://help.pearsoncmg.com/integration/cg/canvas/student/en/content/get_started.htm

C. Course Website (e-Learning) - Class material including the syllabus, problem sets, exam results, lecture slides and other assignments and information related to the course will be posted on the course e-Learning site <u>http://elearning.ufl.edu/</u> The course is found under "e-Learning in Canvas". You are responsible for **all** announcements whether made by email or Canvas inbox and/or posted on the course website for this class. So, please be sure to check into the online course often.

For help with e-Learning, call the UF Computing Help Desk at 352-392-4357, or visit the e-Learning support website: <u>http://helpdesk.ufl.edu/</u>

VII. Assessments and Grading.

Students are expected to check the course website daily for announcements, assignment due dates, and other course related information.

A. Attendance and Participation (iClicker). Lectures are not a simple recapitulation of the textbook; they are designed to synthesize and embellish important concepts, to reinforce and provide a logical structure to the material. Material covered only in lecture may appear on exams. That said, you should not treat lecture materials as the only resource for studying for the exam. Lecture materials should be regarded as a guide for further learning.

Physical attendance and participation will be recorded during lecture as iClicker assessments given on up to 20 different days (0.5 point per lecture). Your answers do not have to be correct to receive full credit, and a single response is enough to receive full credit for that day. You will only receive credit for participation while being physically present in class. No participation points will be given to attendance via zoom from a location different than the class location. Participation in 10 lectures will be counted towards the final grade (1% of the final grade), and the rest will be forgiven without any documentation. Hence, you only need to attend and participate in 10 lectures throughout the semester to get the full participation score. Therefore, there will be no "excuses" granted for medical or personal reasons for one missed lecture. Prolonged or chronic illnesses (more than 8 lectures missed) will be considered only if proper documentation (please see below) is provided.

If you haven't done so already, please install the app and create an iClicker student account: <u>https://at.ufl.edu/service-teams/classroom-technology/iclicker-response-</u> <u>system/</u>

B. Pre-Lecture Assignments (Reading quizzes, Pearson Mastering Genetics). Students are strongly encouraged to read the assigned textbook chapters before the lectures. The course covers a lot of material; therefore, reading the assigned chapters BEFORE the lecture will help you better comprehend and consolidate the material, as well as improve your ability to solve homework problems.

Reading quizzes will assess remembering and comprehension of the reading assignments BEFORE the lecture discussions of that week. Reading quizzes are assigned online on the Pearson website at least 7 days before the due date and are usually due on Mondays at 10:00 pm (please see the "XV Tentative Course Schedule Section of this Syllabus"). The reading quizzes assess the reading assigned for that week, however, reading questions from previous reading assignments may also appear. **The assignments are open-book. Working in groups is discouraged.** It is in your interest to read the assigned chapters and learn the material weekly. I recommend reworking of pre-lecture assignments after the due date (not graded) as practice for the exam.

The pre-lecture assignments (reading quizzes) are worth 4 % of the final grade. Each assignment is worth 2 points. The pre-lecture assignments are allowed to be taken only once (with 3 tries per question) and are composed of about 10 multiple-choice questions. Therefore, please make sure to give yourself plenty of time to complete the assignment in one sitting. There will be a penalty for each incorrect attempt at a question that depends on the number of choices in the question. There will be a penalty of 10% for every day late. 10 out of 12 highest score reading quizzes will be counted, and the rest tossed out at the end of the semester.

Extensions for reading quizzes will only be granted if a notice from the doctor or a letter from the DSO documents inability to study/work 5 out 7 seven days prior to the deadline. Letters

recommending withdrawal from the course will not be considered for an extension of prelecture assignments.

C. Homework Assignments (Pearson Mastering Genetics). Homework assignments (5 points each) will help you comprehend the material better, compare and contrast the concepts to each other, and apply the knowledge to new situations. Homework is assigned online on the Pearson website at least 7 days before the due date and is usually due on Mondays at 10:00 pm. 2 attempts per homework assignment and 3 attempts per question are allowed (you will keep the best score). 10 best scores out of 12 will be kept in the end of the semester. The homework assignments are open book and working in groups is encouraged. There is no penalty for using hints or for a second attempt before the due date. A late penalty of 25% per day applies.

Due dates are posted within the individual Modules on Canvas. All assignments must be completed by the stated due date and time for full credit. Once assigned, online assignments are available at all times up until the deadlines. Because they are assigned well ahead of time, documentation of illness or a personal matter must be provided for at least **five of the seven days** of the week of the assignment's deadline **by the Dean of Student's Office, DSO or notice from a doctor** for accommodations to be made. A doctors notice or a letter from the Dean of Students Office stating that the student is recommended to withdraw from a class will not be considered to re-make a homework assignment. The documentation must explicitly state that the student is recommended to re-make the assignment on the missed days.

It is in your best interest to plan to submit all online assignments well ahead of the posted deadlines, so that you have time to deal with technical problems should they arise. If there is a technical problem with website access or a particular assignment within *CANVAS*, you must contact *eLearning* technical support and the instructor at least 48 hours prior to the deadline, so appropriate steps can be taken to fix the issue and appropriate extensions can be given, if necessary. Thus, check early that you can access the assignments. You will not be granted an extension for technical problems if you do not contact the instructor well before the deadline.

D. Exams (75% of the final grade):

How many exams will be given? There will be three Unit Exams (each worth 25 % of the final grade) and one cumulative Final Exam (worth 25 % of the final grade). The highest three scores out of the four exams will be counted towards the final grade, and the lowest score dropped at the end of the semester. You are not required to take the cumulative Final Exam if you already took the 3 Unit Exams.

What will be covered on the exam? The topics covered on each exam are listed in the "XV. Tentative Course Schedule" Section of this syllabus. Each exam will cover material from the assigned reading in the textbook, lectures, pre-lecture assignments, homework, in-class learning activities, and discussions. Practice exams will be posted on eLearning.

How do I prepare for the exam? To prepare for the exams, review the assigned textbook chapters and lecture slides, the homework, and pre-lecture assignments. Past exams will be posted on Canvas. Each lecture presentation has the Learning Objectives slide. This slide is your learning guide, which you can use to prepare for the exam.

What is the format of the exams? Paper and scantron. Exam questions include multiplechoice and numerical answer or short answer response-type questions. Expect exams to require the full 2 hours allotted.

What can I bring to the exams? Bring No2 pencils. Bringing calculators to the exams is encouraged. You may use your scientific calculator during exams if you demonstrate to the proctor that the memory has been cleared. Your belongings must be brought to the front of the class before the exam begins. Please make sure your cell phone is off or on silent. Water

bottles are allowed on the floor next to you. Baseball caps are allowed but only if worn backwards – with the bill to the back.

How will the exams be graded? Each of the four exams allow a maximum of 125 points. A curve may be applied at the instructor's discretion. The curve can only raise your grade, not decrease it. Regrades must be requested in writing within 5 business days of return of the exam.

What do I do if I miss an exam once? A score of 0 will be assigned for the missed exam and discarded at the end of the semester if the other 3 exams (2 Unit exams and 1 Final) are taken. No documentation of illness from a doctor or letter from the Dean of Students Office is required for the first missed exam. If you feel sick on the day of the exam, please skip the exam. There is no penalty for missing one of the four exams during the course.

What do I do if I have to miss a second Unit Exam? If you miss a second unit exam (not the Final Exam), you will need to provide a proper documentation (a letter from your primary care provider or a letter from the Dean of Students, please see below) to pro-rate your second missed exam. If you have an excused absence from a second exam, you will receive a score of 0 for that exam until the end of the semester, and the grade of the cumulative Final Exam will replace the grade for the missed exam.

What information counts as "proper documentation"? This can be a letter from your primary care provider or a letter from the <u>Dean of Students Office</u>. The documentation must explicitly state your name, date of missed assessment, and that you are recommended to make up any missing assessment or assigned work for those specific dates (5 out of 7 days before the deadline for reading quizzes and homework assignments). 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). Any request for a missing-related exam re-grade must be submitted by email to the instructor (Dr. Zhanar Abil, abilz@ufl.edu) within 5 business days of the exam or assignment deadline. If the documentation recommends withdrawing from class, please withdraw from class. A letter recommending withdrawal from class will not be accepted for extending assignment deadlines or exam pro-rating.

What do I do if I do not have proper documentation for the second missed "unit" exam? You will receive a final grade of 0 for the second exam.

What do I do if I miss 3 "unit" exams (first unexcused and 2 others excused). You may request a withdrawal or an incomplete (please contact your academic advisor). If your second and third missed Unit Exams are unexcused, you will get a failing grade of E for the course.

What do I do if I miss one unit exam and unable to attend the Final Exam? First, provide the instructor with proper documentation for missing the Final Exam as soon as possible. Second, consider a make-up Final Exam, withdrawing from the class, or getting an incomplete (please contact your course instructor and your academic advisor). The Final Make-Up Exam may be in a closed-book 2-hour essay format.

What do I do if I miss one "unit" exam and miss the final exam without proper documentation? You will receive a final grade of 0 for each of the exams, one of which will be tossed in your final grade calculation. Hence, you will receive a score of 0 for one of the exams counted towards the final grade.

To recap, if you have never skipped an exam before in this class, and you feel sick on the day of the exam, skip the exam, recover. Make sure to take the other 3 exams. You will receive a grade of 0, which will be discarded at the end of the semester after you have taken the other 3 exams. You will only need to provide documentation of illness or personal matter if you miss a second exam.

E. **Group Presentations.** At the end of the semester, students will deliver 10-15 min group presentations to the entire class. After the scheduled Exam 1 date, students will be divided in groups and assigned a topic. The Group Presentation project will be worth 10% of the final

grade. Half of the grade will be assigned as the average of your teammates score for you as a teammate, and half of the grade will be assigned based on TA grading of the presentation quality. Teams will be distributed to present on either 19th or 21st of November, during the scheduled class meetings. If you are unable to be present in class on the assigned day, your teammates will decide how that will reflect on your grade.

F. Grading Summary*

	Assignments	Points each	Total points	Percentage
Participation	10 out of 20 counted	0.5	5	1
Reading quizzes	10 out of 12 counted	2	20	4
Homework	10 out of 12 counted	5	50	10
Exams	3 out of 4 counted	125	375	75
Group presentation	1	50	50	10
Course total			500	100

*May be subject to minor changes at the discretion of the instructor

Please note that Mastering grades can take up to a day to transfer to Canvas, so don't panic if you don't see them right away.

Grading will be on a per-cent scale.

94 - 100% Α 90 - 93.9% A-87 - 89.9%B+84 - 86.9% B 80 - 82.9%B-77 - 79.9% C+74 - 76.9%С 70 - 73.9%C-67 - 69.9% D+ 64 - 66.9%D 60 - 63.9%D-<60 E

A curve may be applied at the instructor's discretion. The curve can only raise your grade, not decrease it. Please see <u>https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx</u> for UFs policy for assigning grade points.

F. Computing Requirements - It is the sole responsibility of the student to maintain a functioning and compatible computing system, proper software and a reliable internet connection. Computing/internet connectivity issues will NOT be acceptable excuses for missed deadlines, unless they are brought to the attention of the instructor **at least 48 hours prior to the deadline** and accompanied by the ticket number from technical support. See Resources for Technical Support contact information. Microsoft Office programs are required for many of the assignments; it can be accessed by current UF students through <u>GatorCloud.</u>

VIII. Guide for Success

The UF College of Liberal Arts and Sciences assumes that each student will devote around 3 hours per week per credit-hour of each course, including time in lectures and labs. Because PCB 3063 is 4 credits, each student should therefore expect to devote around 12 hours per week to this course during a regular semester. A recommended time allocation is below.

Activity	Hours per Week
Textbook Readings	3
Lectures	4
Online Assignments	2
Review and Study	3

If you find yourself spending less than the recommended number of hours per week on average, you should recognize that you may have difficulty learning and comprehending the material in this time, and this will probably be reflected in poor performance on your exam. If you find yourself spending more than the recommended number of hours per week on average on these activities, discuss this with your course instructor to see if you can refine your study habits. Research shows that short but regular and consistent time commitment to an activity improves learning. Therefore, to get the most out of the class, study regularly and every week. Do not delay the activities (reading, studying, homework, project assignment) until the last night before the deadline or the exam.

IX. Academic Honesty

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 for the exam."

Note: I hope you work in study groups on assignments; explaining concepts in this group setting is expected, however, when you solve questions, you will learn the material best if you do all of the calculations on your own. It is not unusual for me to take a quiz or assignment question, replace the numbers and place it on an exam. Be prepared, not sorry!

XI Diversity and Inclusion

Diversity and Inclusion: It is the course instructor's intention to respect and treat all students equally, regardless of their gender, sexuality, disability, age, socioeconomic status, ethnicity, race, and culture. This includes providing the necessary resources for every student's learning needs, respecting the students' right to self-identity, valuing their different beliefs and perspectives, and celebrating their differences. Similarly, the expectation for this class is that all the students treat and respect each other as described above. It is in the interest of all of us to foster a welcome and inclusive environment. Your concerns and suggestions for improving the inclusivity of the environment are encouraged and appreciated.

XII. Accommodations for Students with Disabilities

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the Disability Resource Center. See the "<u>Get Started With the</u> <u>DRC</u>" webpage on the Disability Resource Center site. It is important for students to share their

accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

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.

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the Disability Resource Center. See the "Get Started With the DRC" webpage on the Disability Resource Center site. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

XIII. Counseling Center

Many students experience test anxiety and other stress related problems. Go to "<u>A Self Help Guide</u> <u>for Students</u>" to view CWC suggestions. In addition, a number of support systems are available through the UF Counseling and Wellness Center (3190 Radio Road, 392 1575, <u>https://counseling.ufl.edu/</u>).

XIV. Course Evaluations. Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <u>https://gatorevals.aa.ufl.edu/students/</u>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under 1 GatorEvals, or via <u>https://ufl.bluera.com/ufl/</u>. Summaries of course evaluation results are available to students at <u>https://gatorevals.aa.ufl.edu/public-results/</u>.

XV. 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.

XVI. Tentative Course Schedule

This is a tentative schedule; the dates and coverage of topics are subject to change. To allow more flexibility in student schedules, all assignments for each week are due at 11:59 PM. This is NOT an invitation to wait until the last minute to do all the assignments. Get them done early and avoid technical problems or rushing through them without learning the material.

	Week	Торіс	Read	Due on Pearson Mastering Genetics
1	22-Aug	Course policies, Introduction to Genetics		
	27-Aug	Mitosis & meiosis;	Ch 2	Pre-Lecture Assignment 1 (Ch 2,3)
2	29-Aug	Mendelian genetics: Punnett squares & probability	Ch 3	Homework 1 (Mastering, Syllabus) Both Due Thur Aug 29 th at 10:00pm
	3-Sep	Extensions of Mendelian genetics	Ch 4	Pre-Lecture Assignment 2 (Ch 4)
3	5-Sep	Extensions of Mendelian Genetics	Ch 4	Homework 2 (Ch 2,3) Both Due Mon Sep 2nd at 10:00pm
	10-Sep	Linkage mapping Genome	Ch 5	Pre-Lecture Assignment 3 (Ch 5,6)
4	12-Sep	sequencing Microbial Genetics	Ch 6	Homework 3 (Ch 4) Both Due Mon Sep 9th at 10:00pm
	17-Sep	Sex determination	Ch 7	Pre-Lecture Assignment 4 (Ch 7)
5	19-Sep	Exam 1 (CH 2-6)		Homework 4 (Ch 5,6) Both Due Mon Sep 16 th at 10:00 pm
	24-Sep	Chromosome variation	Ch 8	Pre-Lecture Assignment 5 (Ch 8, 10)
6	26-Sep	DNA structure and analysis	Ch 10	Homework 5 (Ch 7) Both Due Mon Sep 23rd at 10:00pm
	1-Oct	DNA replication and recombination DNA organization in chromosomes	Ch 11,12	Pre-Lecture Assignment 6 (Ch 11, 13)
7	3-Oct	Genetic Code	Ch 12,13	Homework 6 (Ch 8,10) Both Due Mon Sep 30 th at 10:00 pm
	8-Oct	Transcription	Ch 13	Pre-Lecture Assignment 7 (Ch 13,14)
8	10-Oct	Translation and proteins	Ch 14	Homework 7 (Ch 11-13) Both Due Mon Oct 7 th at 10:00 pm
	15-Oct	Mutation, DNA Repair	Ch 15	Pre-Lecture Assignment 8 (Ch 15)
9	17-Oct	Exam 2 (CH 7,8,10-13)		Homework 8 (Ch 13-14) Both Due Mon Oct 14 th at 10:00 pm
	22-Oct*	Regulation of gene expression:	Ch 16	Pre-Lecture Assignment 9 (Ch 16,17)
10	24-Oct*	Bacteria Regulation of gene expression: Eukaryotes	Ch 17	Homework 9 (Ch 15) Both Due Mon Oct 21 st at 10:00 pm
	29-Oct	Post Transcriptional Regulation	Ch 18	Pre-Lecture Assignment 10 (Ch 18,20)
11	31-Oct	Recombinant DNA Technology	Ch 20	Homework 10 (Ch 16, 17) Both Due Mon Oct 28 th at 10:00 pm
	5-Nov	Applications of Genetic	Ch 22	Pre-Lecture Assignment 11 (Ch 22, 24)
12	7-Nov	Engineering Cancer Genetics	Ch 24	Homework 11 (Ch 18, 20)

				Both Due Mon Nov 4 th at 10:00 pm
	12-Mar	Genomic Analysis	Ch 21	Pre-Lecture Assignment 12 (Ch 21)
13	14-Nov	Exam 3 (CH 15-18,20,22,24)		Homework W12 (Ch 22, 24) Both Due Mon Nov 11 th at 10:00 pm
	19-Nov	Special topics 1-6, Ch 9		Due in class: Group presentations
14	21-Nov	Ch 19, 21, 23, 25, 26, BEP-1		Due in class: Group presentations
	26-Nov	Break		
	28-Nov	Break		
15	3-Dec	Final exam review		Bring your specific questions and prepare to work in groups
	9-Dec 3-5pm	Final exam: Cumulative		

*The instructor will be out of town on these dates. Lecture will be given by a different instructor and/or additional lecture materials will be available online.