

PCB 3063 – Genetics – Fall 2020

Remote Instruction - Section 0001 TR 10:30-11:50 am

3 credit hours

*Genetics is an asynchronous remote instruction course. Lectures are posted as narrated .mp4 files. Textbook readings and assignments are online at **Sapling Genetics**. Online Exams and Workshops will be held only during the scheduled class time.*

Instructor: Dr. Cynthia Bayer

Communication: Webcourses *Inbox* or *Announcements*

Zoom Workshop: TR 10:30 am

Zoom Office Hour: R 12:00 noon

Undergraduate Teaching Assistant: Alba Rodriguez

Zoom Office Hour: TBD

Course Description: This general Genetics course will cover the basic concepts of transmission (classical) genetics and molecular genetics. Transmission genetic principles include chromosome dynamics during cell division, disorders of chromosome segregation in humans, Mendelian and non-Mendelian inheritance of characters, sex determination, pedigree analysis, and eukaryotic gene mapping. Molecular genetic principles include DNA structure and replication, storage and expression of genetic information, regulation of gene expression, mutation and repair, epigenetics, and biotechnology.

Online learning: Due to the requirement for this course to be taught remotely, you will be expected to have daily access to the internet and email. Lecture material will be posted as narrated Powerpoint videos. Assigned readings, homework, quizzes and exams are online. Assignment deadlines and exam dates are listed in [Weekly Modules](#). Any updates, changes and reminders will be communicated to you via course email and Announcements. All students at UCF are required to obtain a [Knight's Email account](#) and check it regularly for official university communications. If you do not own a computer, there are computers accessible to you in all UCF's computer labs, and most computer labs have computers connected to the internet. For further information on computer labs, please see guides.ucf.edu.

I will hold *Zoom* Workshops every Tues and Thurs at 10:30 am to answer questions about lecture material, Sapling homework, End-of-Chapter Problems and other recommended exercises for practice and application. Students are not required to attend but are encouraged to come prepared to check comprehension and increase understanding of the material. Online learning requires planning and self-pacing so that you may be successful in my course. I would highly recommend treating this course like a regular lecture course, keeping up with lectures, workshops and assignments according to the Weekly Modules schedule. Students should plan to spend at least **12 hours per week** watching lecture videos, reading chapter material, completing Sapling assignments and learning concepts. Please do not be tempted to skip a week of lectures or assignments and expect to catch up easily.

Course Prerequisites: This is an upper division course for students who have completed two semesters of Chemistry (CHM 2045 and CHM 2046) and earned a grade of C or higher in Biology 1 (BSC 2010C).

Student Learning Outcomes: Successful Genetics students will demonstrate a broad understanding of the basic principles of Genetics, demonstrate an ability to use information in new situations to solve problems, and be able to draw connections between concepts. Students will be expected to:

- **Demonstrate** how the inheritance of alleles and characters correlates with chromosome dynamics during cell division.
- **Apply** the principles of Mendelian and non-Mendelian inheritance of characters to a variety of pedigrees and be able to distinguish between different modes of inheritance.
- **Calculate** the genetic distance between linked genes using the concepts underlying gene mapping in eukaryotes.
- **Define** an allele at the molecular level and as a unit of inheritance.
- **Deduce** connections and **distinguish** between the cellular processes of DNA replication, transcription and translation.
- **Compare** and **contrast** the control of gene expression in bacteria and eukaryotes.

Students will be evaluated on meeting these objectives via on-line homework, quizzes & 6 exams

Academic Activity - Course Expectations:

- To meet the registrar's requirement for documentation of your participation in this course, please complete the **Course Expectations/Syllabus Quiz**, found in our Webcourse Quiz section, by **5:00 pm Friday, August 28**. Failure to do so will result in a delay in the disbursement of your financial aid.
 - All students are required to complete the Course Expectations/Syllabus Quiz for points.
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Course website:

Access our course website at Webcourses@UCF via the myUCF portal using your NID and password. You will find links to the **Syllabus, Weekly Modules, Sapling Learning Homework & Quizzes, End-of-Chapter Problems, Web Resources, Grades, Online Exams, Zoom** and **Chat** tools. **Chapter PowerPoints** as well as narrated .mp4 files are posted.

Communication via *Inbox*:

- Please contact me via Webcourses *Inbox*. Emails sent to my UCF address will not be answered.
 - Compose a clear and succinct email message, including your name and course.
 - Before emailing me with a question about course policies, you must read the syllabus to find the answer yourself.
 - I will carve out time once per weekday to answer emails and attempt to answer your message within 24 hours.
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REQUIRED Textbook: Participation in the on-line course **Sapling Learning Genetics**, which contains graded quizzes, homework, and a link to the electronic textbook ***Pierce Genetics: A Conceptual Approach, 6th ed.*** Options for purchasing access to this course are described in the **Introduction & Getting Started** page in Webcourses. Be sure to register by Sept 6.

Course Grade: 60% = Best 3 out of 4 Regular Exams (100 points/exam)
20% = Required Final Exam (100 points)
20% = Sapling Learning: Homework & Quizzes

- Students are responsible for keeping track of their grades and identifying issues within 2 days of any grade posting in Webcourses.
- Letter grades for the semester will be awarded according to the scale below. Letter grades will adhere to this percentage range with no exceptions. There will be **no curving** of final grades.

A = 90-100% B = 80-89% C = 70-79% D = 60-69% F = 59% and below

Regular Exams: There will be 4 online exams, each worth 100 points. Exams are based on assigned readings, Sapling Learning assignments, End-of-Chapter Problems, and material covered in lecture Powerpoints, narrations and Workshops. ***Exams are held during scheduled class time, beginning at 10:30 am.*** The lowest score of these 4 regular exams will be dropped automatically.

Final Exam: All students are required to take the COMPREHENSIVE (covering all material from the semester) Final Exam, worth 100 points. The online Final Exam will be held according to the UCF Final Exam Schedule for Fall 2020, on **Tues Dec 8 @ 10:00 am.**

Sapling Learning: Homework & Quizzes are assigned for each chapter, and together make up 20% of your course grade. *Availability* and *due dates* are listed in the Sapling course and in the Weekly Modules. After the due date for any assignment has passed, you will not receive credit for that assignment. Homework (unlimited attempts, hints provided) and Quizzes (1 attempt, no hints) will be automatically graded and synched weekly to Webcourses gradebook. **BE SURE TO SELECT THE **SUBMIT** BUTTON AT THE END OF THE QUIZ TO SUBMIT ALL ANSWERS.** The lowest grade of all quizzes will be dropped automatically. The lowest grade of all homework assignments will be dropped automatically.

End-of-Chapter Problems are listed in Webcourses as recommended practice and review for each chapter. You will not submit answers or receive credit but are strongly encouraged to complete these problems for a better understanding and review of the chapter concepts.

Zoom Workshops and Office Hours: Please take the time to familiarize yourself with *Zoom* by visiting the [UCF Zoom Guides](#). You may choose to use *Zoom* on your mobile device (phone or tablet). Meeting dates and times will be scheduled through Webcourses and should appear on your calendar.

- Find the scheduled meeting invitation at the *Zoom* tab in our Webcourse.
- Join the meeting on time. Participants will be placed in a waiting room and permitted entry only during the first few minutes to ensure security of the meeting.
- *Zoom* sessions may be recorded. By joining, participants agree to be audio- and video-recorded.
- Keep your microphone muted unless asking or responding to a question.
- Practice patience.

- Anyone who violates UCF rules of conduct or fails to follow basic rules of courtesy will be removed from the meeting.

Taking Online Exams:

- All exams are available in the Webcourses *Quizzes* tool during the scheduled class time on the dates listed in the Syllabus and Weekly Modules. Four regular exams are held at 10:30 am. The Final Exam is scheduled for Tues, Dec 8 at 10:00 am.
 - Exam questions will be multiple choice.
 - Each exam is timed.
 - Each exam is available **ONLY** at the scheduled time.
 - Students are not allowed to use assistance from another person, GroupMe, WhatsApp, Chegg Study, Google, or any other website while taking an online exam. (Discussed in greater detail in the **Academic Integrity** section below.)
 - Quiz Audit Log will be used for all exams

Excused Missed Exams:

- If an exam is missed due to an official, documented, University-accepted absence, a makeup exam will be arranged. Excused absences include official UCF business at which your presence is required, U.S. Military-related business (e.g. Reserve Duty), legal obligation (e.g. jury duty).
 - You must provide to me documentation with your name and the date affected **1 week prior** to the scheduled exam date.
 - A make-up exam may include short answer questions in addition to multiple choice.
- A makeup exam **may** be permitted if any other legitimate* documented reason that circumstances beyond your control, an EMERGENCY, prevented you from taking the scheduled exam (including, but not limited to, your hospitalization or a death in your immediate family)
 - *Official documentation from an appropriate authority* (doctor, police, judge, etc.) must be **provided within 24 hours of the missed exam**. *A doctor's note must be written on letterhead paper with a contact phone number and must document that a medical condition was treated or that a medical procedure or hospitalization occurred.
 - *If I approve your excuse*, I will arrange a time for a make-up exam on the last day of class. The make-up may include short answer questions in addition to multiple choice.

Unexcused Missed Exams: If a student misses an exam for an unexcused event (e.g. forgetting there was an exam, vacations, family gatherings) or *cannot provide acceptable documentation*, then they will receive a score of zero for that exam. The first zero score will be dropped as the lowest scoring exam. Any additional zero exam scores due to unexcused absences will count towards the final course grade.

Reviewing Exams: Your responses will be available for viewing after all students, including students with SAS time extension accommodations have completed their exams, and the grades are posted.

Academic Integrity:

As reflected in the UCF creed, integrity and scholarship are core values that should guide our conduct and decisions as members of the UCF community. Plagiarism and cheating contradict these values and are serious academic offenses. Students enrolled at UCF are expected to familiarize themselves and follow the University's *Rules of Conduct* (Section UCF-5.008) in the Golden Rule handbook <http://goldenrule.sdes.ucf.edu>.

According to Section 1, "Academic Misconduct," students are prohibited from engaging in

1. Unauthorized assistance: Using or attempting to use unauthorized materials, information or study aids in any academic exercise unless specifically authorized by the instructor of record. The unauthorized possession of examination or course-related material also constitutes cheating.
2. Communication to another through written, visual, electronic, or oral means: The presentation of material which has not been studied or learned, but rather was obtained through someone else's efforts and used as part of an examination, course assignment, or project.
3. Commercial Use of Academic Material: Selling of course material to another person, student, and/or uploading course material to a third-party vendor without authorization or without the express written permission of the university and the instructor. Course materials include but are not limited to class notes, Instructor's PowerPoints, course syllabi, tests, quizzes, labs, instruction sheets, homework, study guides, handouts, etc.
4. Falsifying or misrepresenting the student's own academic work.
5. Plagiarism: Using or appropriating another's work without any indication of the source, thereby attempting to convey the impression that such work is the student's own.
6. Multiple Submissions: Submitting the same academic work for credit more than once without the express written permission of the instructor.
7. Helping another violate academic behavior standards.
8. Soliciting assistance with academic coursework and/or degree requirements.

Unauthorized Use of Technology for Graded Work: If you were in a classroom setting taking an exam, would you ask the student sitting next to you for the answer to an exam question? The answer should be no. This means that students are not allowed to use GroupMe, WhatsApp, or any other form of technology to exchange course material associated with a graded assignment, quiz, exam, etc. when opened on Webcourses.

The completion of graded work in an online course should be considered a formal process: Just because you are not in a formal classroom setting being proctored while taking a quiz or exam does not mean that the completion of graded work in an online course should not be treated with integrity. The following are examples that show how the use of technology can be considered academic misconduct and could result in the same penalties as cheating in a face-to-face class:

- Taking a screen shot of an online quiz or exam question, posting it to GroupMe or WhatsApp, and asking for assistance is considered academic misconduct.
- Answering an online quiz or exam question posted to GroupMe or WhatsApp is considered academic misconduct. Giving advice, assistance, or suggestions on how to complete a question associated with an online assignment, quiz, or exam is considered academic misconduct.

- The use of outside assistance from another student or by searching the internet, Googling for answers, use of websites such as Quizlet, Course Hero, Chegg Study, etc. is considered academic misconduct.
- Gathering to take an online quiz or exam with others and sharing answers in the process is considered academic misconduct.

If a student or group of students are found to be exchanging material associated with a graded assignment, quiz, or exam through any form of technology (GroupMe, WhatsApp, etc.), or use of outside assistance (Googling answers, use of websites such as Quizlet, Course Hero, Chegg Study, etc.), they could receive anywhere from a zero grade on the exercise to an “F” in the course depending on the act.

Unauthorized Use of Websites and Internet Resources: There are many websites claiming to offer study aids to students, but in using such websites, students could find themselves in violation of academic conduct guidelines. These websites include (but are not limited to) Quizlet, Course Hero, Chegg Study, and Clutch Prep. UCF does not endorse the use of these products in an unethical manner, which could lead to a violation of our University’s Rules of Conduct. They encourage students to upload course materials, such as test questions, individual assignments, and examples of graded material. Such materials are the intellectual property of instructors, the university, or publishers and may not be distributed without prior authorization. Students who engage in such activity could be found in violation of academic conduct standards and could face course and/or University penalties. Please let me know if you are uncertain about the use of a website so I can determine its legitimacy.

Unauthorized Distribution of Class Notes: Third parties may attempt to connect with you to sell your notes and other course information from this class. Distributing course materials to a third party without my authorization is a violation of our University’s Rules of Conduct. Please be aware that such class materials that may have already been given to such third parties may contain errors, which could affect your performance or grade. If a third party should contact you regarding such an offer, I would appreciate your bringing this to my attention. We all play a part in creating a course climate of integrity.

Quiz Audit Log: For each online exam, you are expected to remain on the testing screen for the duration. You may not visit other sections of the course, other websites, or communication tools for assistance. I will be monitoring the Webcourses@UCF Quiz Audit Log for compliance. Failure to access only the exam during testing will result in an academic integrity violation.

Responses to Academic Dishonesty, Plagiarism, or Cheating: Students should also familiarize themselves with the procedures for academic misconduct in UCF’s student handbook, *The Golden Rule* handbook <http://goldenrule.sdes.ucf.edu>. UCF faculty members have a responsibility for students’ education and the value of a UCF degree, and so seek to prevent unethical behavior and respond to academic misconduct when necessary. Penalties for violating rules, policies, and instructions within this course can range from a zero on the exercise to an “F” letter grade in the course. In addition, an Academic Misconduct report could be filed with the Student Conduct and Academic Integrity <https://scai.sdes.ucf.edu> which could lead to disciplinary warning, disciplinary probation, or deferred suspension or separation from the University through suspension, dismissal, or expulsion with the addition of a “Z” designation on one’s transcript.

Being found in violation of academic conduct standards could result in a student having to disclose such behavior on a graduate school application, being removed from a leadership position within a student organization, the recipient of scholarships, participation in University activities such as study abroad, internships, etc.

Let's avoid all of this by demonstrating values of honesty, trust, and integrity. No grade is worth compromising your integrity and moving your moral compass. Stay true to doing the right thing: take the zero, not a shortcut.

Time commitment: For most students striving for B grades or higher, I recommend scheduling about 12 hours per week for engaging with this course. Your background knowledge/experience and other variables may require you to spend additional time. Please plan accordingly by scheduling time on your calendar now. Several factors influence student academic performance and long-term learning. Active engagement in all course activities (e.g., lecture Powerpoints, textbook readings, Sapling homework and quizzes, workshops, End-of-Chapter problems, reviewing) will contribute to your learning and to success in this course.

Course Accessibility: It is my goal that this class be an accessible, inclusive and welcoming experience for all. If anyone believes the design of this course poses barriers to effectively participating and/or demonstrating learning in this course, please contact me (with or without a Student Accessibility Services (SAS) accommodation letter) to discuss reasonable options or adjustments. You may also want to contact SAS <http://sas.sdes.ucf.edu> (Ferrell Commons 185; 407-823-2371) to talk about academic accommodations.

Help & SARC: Please ask for help if you need it! I am here to answer your questions. Additionally, help is available through SARC (Student Academic Resource Center, Howard Phillips Hall, Room 113; 407-823-5130; <http://sarc.sdes.ucf.edu>). SARC provides students with free individual and small-group tutoring for Genetics with Supplemental Instruction (SI). Students can also request a Learning Consultation with a Learning Skills Specialist or attend Academic Success Workshops to improve study skills & strategies.

Deployed Active Duty Military Students: Students who are deployed active duty military and/or National Guard personnel and require accommodation should contact their instructors as soon as possible after the semester begins and/or after they receive notification of deployment to make related arrangements.

UCF Cares: UCF and I care not only about your academic success, but also your overall well-being. Please visit UCFcares.com <http://cares.sdes.ucf.edu/> if you are seeking resources or support, or if you are worried about a friend or classmate. Free services and information are included for a variety of student concerns, including but not limited to alcohol use, bias incidents, mental health concerns, sexual harassment or assault, and financial challenges. You can also e-mail ucfcares@ucf.edu with questions. You can reach a UCF Cares staff member Student Care Services, <http://scs.sdes.ucf.edu>, Ferrell Commons 142, between 8 a.m. and 5 p.m. by calling 407-823-5607.

If you are in immediate distress, please call Counseling and Psychological Services (CAPS), Counseling Center 101 <http://caps.sdes.ucf.edu> to speak directly with a counselor 24/7 at 407-823-2811, or call 911.

Academic Services and Resources: A list of available academic support and learning services is available at [UCF Student Services](#). Click on "Academic Support and Learning Services" on right-hand side to filter.

Non-Academic Services and Resources: A list of non-academic support and services is also available at [UCF Student Services](#). Click on "Support" on the right-hand side to filter.

Campus Safety Statement: Emergencies on campus are rare, but everyone should be aware of their surroundings and familiar with some basic safety and security concepts.

- In case of an emergency, dial 911 for assistance.
 - Every UCF classroom contains an emergency procedure guide posted on a wall near the door. Please make a note of the guide's physical location and consider reviewing the online version at http://emergency.ucf.edu/emergency_guide.html.
 - Familiarize yourself with evacuation routes from each of your classrooms and have a plan for finding safety in case of an emergency.
 - If there is a medical emergency during class, a first aid kit or AED (Automated External Defibrillator) may be required. To learn where those items are located in any building, see <http://www.ehs.ucf.edu/AEDlocations-UCF>
 - To stay informed about emergency situations, sign up to receive UCF text alerts by going to my.ucf.edu and logging in. Click on "Student Self Service" located on the left side of the screen in the tool bar, scroll down to the blue "Personal Information" heading on your Student Center screen, click on "UCF Alert", fill out the information, including your e-mail address, cell phone number, and cell phone provider, click "Apply" to save the changes, and then click "OK."
 - Consider viewing this video [You CAN survive an active shooter](#) about how to manage an active shooter situation on campus or elsewhere.
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COVID-19:

To protect members of our community, everyone is required to wear a facial covering inside all common spaces (<https://policies.ucf.edu/documents/PolicyEmergencyCOVIDReturnPolicy.pdf>).

COVID-19 and Illness Notification – Students who believe they may have a COVID-19 diagnosis should contact UCF Student Health Services (407-823-2509) so proper contact tracing procedures can take place.

Students should not come to campus if they are ill, are experiencing any symptoms of COVID-19, have tested positive for COVID, or if anyone living in their residence has tested positive or is sick with COVID-19 symptoms. CDC guidance for COVID-19 symptoms is located here:

(<https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html>)

In Case of Faculty Illness – If the instructor falls ill during the semester, there may be changes to this course, including having a backup instructor take over the course. Please look for announcements or mail in Webcourses@UCF or Knights email for any alterations to this course.

Genetics Lecture Schedule - FALL 2020 - Remote Asynchronous

Aug 25: Introduction & *Chapter 1* Fundamental Concepts

Aug 27: *Chapter 2* Chromosomes & Cellular Reproduction

DROP deadline Thurs, Aug 27 11:59pm

ADD deadline Fri, Aug 28 11:59pm

Sep 01: *Chapter 3* Basic Principles of Heredity

Sep 03: *Chapter 3* Basic Principles of Heredity

Sep 08: *Chapter 4* Sex Determination & Sex-linked Characteristics

Sep 10: *Chapter 5* Extensions & Modifications of Basic Principles

Sep 15: *Chapter 5* Extensions & Modifications of Basic Principles

Sep 17: **EXAM 1 (Chapters 1, 2, 3, 4, 5)**

Sep 22: *Chapter 6* Pedigree Analysis

Sep 24: *Chapter 7* Linkage, Recombination & Gene Mapping

Sep 29: *Chapter 8* Chromosome Variation

Oct 01: *Chapter 10* DNA: The Chemical Nature of the Gene

Oct 06: *Chapter 10* DNA: The Chemical Nature of the Gene

Oct 08: *Chapter 11* Chromosome Structure

Oct 13: **EXAM 2 (Chapters 6, 7, 8, 10, 11)**

Oct 15: *Chapter 12* DNA Replication

Oct 20: *Chapter 12* DNA Replication

Oct 22: *Chapter 13* Transcription

Oct 27: *Chapter 14* RNA Molecules & Processing

Oct 29: *Chapter 15* Genetic Code & Translation

WITHDRAWAL deadline Fri, Oct 30 11:59pm

Nov 03: *Chapter 15* Genetic Code & Translation

Nov 05: **EXAM 3 (Chapters 12, 13, 14, 15)**

Nov 10: *Chapter 16* Control of Gene Expression in Bacteria & *Chapter 17* Eukaryotes

Nov 12: *Chapter 17* Control of Gene Expression in Eukaryotes

Nov 17: *Chapter 18* Gene Mutations & DNA Repair

Nov 19: *Chapter 18* Gene Mutations & DNA Repair

Nov 24: *Chapter 19* Molecular Genetic Analysis & Biotechnology

Nov 26: **Thanksgiving**

Dec 01: *Chapter 19* Molecular Genetic Analysis & Biotechnology

Dec 03: **EXAM 4 (Chapters 16, 17, 18, 19)**

Dec 08: **Comprehensive FINAL EXAM** (Tues, 10:00 am - 12:50 pm)

Note that the instructor reserves the right to make changes to the syllabus or other aspects of the course at any time. These changes will be announced in Webcourses.