

PCB 3063 GENETICS

Spring 2018

MWF 11:30 AM-12:20 PM (Section 1)
MWF 12:30 PM -1:20 PM (Section 2)
Classroom Building 2 (CB2), Room 201

Instructor: Dr. Christa Diercksen
Office: Biological Sciences (BIO) 201A
Email: christa.diercksen@ucf.edu

Office hours:

- E-mail is the fastest and best way to communicate with Dr. Diercksen. Students must use their Knightsmail account to communicate with faculty.
- All reasonable attempts will be made to answer emails within a 24 hour time period, M-F and Sun. *Note: Dr. Diercksen is offline on Saturdays.*
- Emails must be written in a professional manner! Please indicate that you are a **Genetics** student and include a brief description of your issue/question in the subject line and sign off your email with your FULL name and UCF ID number.

Office Hours (BIO 201A):

- Monday: 2:00-3:00 PM
- Tuesday: 10:00-11:30 AM
- Wednesday: 9:00-10:30 AM
- Thursday: 2:00-3:00 PM
- Friday: 8:30-9:30 AM

Graduate TA: Michael Haney; Email: MichaelHaney@knights.ucf.edu

Course Description:

- *Credit hours:* 3 (3,0)
- *Course Prerequisites:* CHM 2046 and a grade of "C" or higher in BSC 2010C (Biology I)
- *Purpose of the course:* PCB 3063 is a general genetics course that provides students with the details of subjects related to genetics that were presented in an introductory biology course. It is a required course for several majors at the University of Central Florida such as Biology, Biochemistry Track for Chemistry and Forensic Sciences. It can also serve as a Restricted Elective for majors such as Health Sciences and Biomedical Sciences. PCB 3063 is additionally a prerequisite for several upper level courses such as Evolutionary Biology (PCB 4683) and Population Genetics (PCB 4684) amongst others.

Course objectives:

- To understand:
 - Language and basic concepts of genetics to provide a framework for further study in the field.
 - How traits are inherited and use this information to solve genetic problems and pedigree analysis.
 - How mechanisms during cell division (mitosis and meiosis) can lead to inheritance patterns.
 - How chromosomal abnormalities and gene mutations lead to altered phenotypes.
 - Molecular basis of genetics such as DNA replication, transcription and translation.
 - How gene expression in both prokaryotes and eukaryotes influences phenotypes beyond genotypes.
 - Basic principles of population genetics

General Course Topics:

- Cell reproduction
- Basic Mendelian inheritance and extension of inheritance types
- Pedigree analysis
- Population genetics
- DNA replication and protein synthesis
- Prokaryotic and Eukaryotic gene expression control

Required textbooks/materials:

- **Textbook:** *Genetics: Conceptual Approach, 6th Edition*, Benjamin Pierce
 - **Sapling Learning** (online graded homework resource):
 - All students will need access to our Sapling Learning course.
 - UCF Bookstore options:
 - Sapling Learning access code (includes eBook): ISBN 9781319108441
- OR**
- Loose-Leaf physical edition & Sapling Learning access code (also includes eBook): ISBN 9781319125950
 - Students may also purchase a Sapling Learning access code through the publisher's website directly:

<https://store.macmillanlearning.com/us/product/Genetics%3A-A-Conceptual-Approach/p/1319050964?searchText=Pierce>

Webcourses:

- **Course syllabus with course schedule**
- **Online required quizzes**
- **Initial access to our Sapling Learning course**
- Detailed lecture Powerpoints as they become available through the semester
- Post exam reviews
- Animations/videos files used in lecture
- Web links for relevant course topics
- Course alerts and announcements: **Important: Please ensure you have your Webcourses settings to receive email alert for announcements!**
- Discussion boards for posting any course questions or concerns to peers. Please be aware that inappropriate posts may be removed by the discretion of Dr. Diercksen, and she does not routinely read all posts. Any questions best answered by Dr. Diercksen should be emailed to her directly.
- Your grades as they become available through the semester. *Note: Grades in Webcourses during the semester may not reflect your actual course grade at a give time due to constraints in how Webcourses handles certain grading aspects. Grades are posted there as a courtesy to students for their records.*

Academic Activity: Important Information for Financial Aid:

- Faculty members are required to document students' academic activity at the beginning of each course.
- In order to document that you began this course, please complete the **Genetics Pre-quiz/Academic Activity** found in our Webcourses' Quiz section no later than **January 12, 2018**. Failure to do so will result in a delay in the disbursement of your financial aid.
- All students will receive credit for completion of the pre-test as one bonus point added to the Final Exam raw score.

Course Grade:

- 3 counted lecture exams (4 taken): 20% each
- Final Exam: 20%
- Sapling learning 10%
- Webcourses Quizzes: 10%

The final course grade will be awarded using the following scale:

<u>Grade Range</u>	<u>Grade</u>	<u>GPA</u>
90 - 100	A	4.0
87 - 89	B+	3.25
80 - 86	B	3.0
77 - 79	C+	2.25
70 - 76	C	2.0
67 - 69	D+	1.25
60 - 66	D	1.0
Below 60	F	0

- There will be NO automatic additional curving of grades and no “extra credit” or “bonus” points awarded.
- Final semester grades will NOT be rounded up. (e.g. An 89.9% will be a “B+”). No grades will be altered unless there is a documented error in the grade calculation that would change a student’s course letter grade.
- No grades will be given over the phone or by email according to Federal law (FERPA regulations).
- **Biology majors:** A grade of “C” or higher is required to advance in your Biology coursework. For other majors, please check with your major’s department for more information.

Other important grade information:

- Withdrawal date for the Spring 2018 semester is **Wednesday, March 21, 2018 at 11:59 PM.**
- In compliance with FERPA (Family Education Rights and Privacy Act), no grades will be given over the phone or via email by Dr. Diercksen.
 - Additionally, grades will not be discussed with any individual other than the student (including parents) unless the student has provided written documentation permitting the discussion to Dr. Diercksen.
- For Biology majors, a grade of “C” or higher (69.5% or above) is required to advance in your Biology coursework. For other majors, please check with your major’s department for more information.

Grade Details:

Lecture Exams (20% each):

- Four exams based on lecture material will be given throughout the semester.
 - Exams will be 30 multiple choice questions.
 - *Your lowest grade from these 4 exams will be dropped automatically so you will have THREE counted exams in your final course grade.*
- **Taking Lecture Exams:**
 - All exams will use machine-scored scantrons. You do NOT need to provide the scantrons for your exams, and students will NOT be allowed to use their own scantrons.
 - No extra time will be allowed for arrivals after the exam begins, i.e. You must turn in your exam at the regular end of the class.
 - A photo ID, preferably your UCF student photo ID, will be required when taking the exams. You must know your **UCF ID#** for your exam to be properly scored.

Make-Up Exams:

- *Guaranteed* make-up exams for the 4 lecture exams (and the Final Exam) will be arranged only if you must miss the exam due to official University of Central Florida business at which your presence is required (e.g. university sponsored team event) or for documented U.S. Military related business (e.g. Reserve Duty activities).
 - You must provide Dr. Diercksen with official documentation that contains your name and the date affected within 1 week of missing the exam.

- Students are responsible for arranging a time for the makeup exam with Dr. Diercksen so that makeup exams are preferably completed before exams are released to all students.
- If you miss an exam for any other legitimate documented reason (including but not limited to: major illness, serious family emergency, death in the family, jury duty, etc.), it is up to Dr. Diercksen's discretion if you will be allowed to take the make-up exam. **Important: Work related excuses for missing an exam will NOT be accepted.**
 - You must provide documentation for the absence within 1 week of the exam.
 - If you can not provide documentation for the absence, you will not be allowed to do a make-up exam, and this will be your dropped exam.
- For all other situations (e.g. forgetting there was an exam, oversleeping, etc):
 - You will receive a zero on this exam, and it will most likely be the lowest score dropped from your final course grade.
- Please pay particular attention to exam dates as designated on the course schedule below. They will only be moved if unexpected changes occur in the course schedule (e.g. Campus closes for some unplanned reason, and lecture is cancelled.). Students are expected to plan their private travel and other activities around the exams if they do not want to use a missed exam as their dropped grade.

Reviewing Lecture Exams and Final Exam:

- Scantrons and exams will NOT be returned automatically to students.
- If you wish to view and/or receive a printed copy of your individual exam report sheet (with all correct and incorrect responses indicated), you must request it in person with Dr. Diercksen or the GTA within 2 weeks of an exam grade being posted in Webcourses.
- Once the 2 week window is over for an exam, you may NOT review your individual exam for the rest of the semester.
 - You must resolve any grade concerns within the two week time period as well.
 - Additionally, review of individual exams will NOT be allowed during finals week or after the final exam has been taken.
- An exam review file will be provided on Webcourses after all makeup exams have been completed and these files will remain on Webcourses until the final exam period.

Final Exam (20%):

- The final exam will be given in your lecture classroom according to the UCF Final Exam Schedule for Spring 2018 (see below in course schedule).
- The final exam is **required** and **cumulative** (i.e. covering material from ALL chapters covered during the semester). **This exam can NOT be missed or students will receive a failing grade for the course.**
- Students must take their exam in their regularly registered section unless formally approved by Dr. Diercksen. Documentation for the change in the Final Exam time will be required.

Sapling Learning (10%):

- Sapling Learning is an online resource/homework program matched with our textbook which will have required components for your course grade.
- Each chapter that we cover will have a variety of reading quizzes, homework assignments, animation activities and tutorials. While students receive a dedicated Sapling Learning grade component, the larger goal of this online resource is to give students additional review of course content outside of lecture and allow them to do potentially better on lecture quizzes and exams.
- Availability of each chapter's activities will open on a rolling basis and each chapter will have a due date which can be seen in the Sapling Learning site as well as on the course schedule below.
- Assignments designated as "Homework" (e.g. Homework, Tutorials, Animation Activities, etc) will earn students points towards the Sapling Learning grade. Please review the detailed information for how your grade will be calculated for Homework assignments within the Sapling Learning site.
- "Reading Quizzes" are designated as "Practice" and will allow students to gauge their understanding upon initial reading of a chapter's material but performance on these quizzes will NOT affect a student's grade.
- **Approximately 5%** of the possible points from all assignments **will be dropped** from the final grade calculation for the Sapling Learning grade to allow for missing some assignments throughout the semester.

Registration for Sapling Learning:

- You must have purchased a Sapling Learning access code through either the UCF bookstore or through the publisher's website (see above) to register for the semester.
- After obtaining an access code, follow the **Sapling Learning Log in link** in the Sapling Learning module in our Webcourses.
- For initial registration, Sapling Learning must be accessed through this link in order to ensure you register for our course. After logging in once using this link, you can log in to subsequent sessions from the Webcourses link or from the Sapling home page (<http://saplinglearning.com>).
 - If you already have a Sapling account, enter your username and password in the login box. If the login box is disabled, scroll down to the Create an Account portion of the page, fill in the missing info and click Create My Account.
 - You've been automatically enrolled into the appropriate course on Sapling Learning and will be directed to your course page.
 - Review the system requirements and confirm that Flash is updated and enabled in your browser.
- The following link includes more detailed instructions on how to register for your course: <https://community.macmillan.com/docs/DOC-5972-sapling-learning-registering-for-courses>.
- Need Help? Sapling Learning's technical support team can be reached by phone or by webform via the Student Support Community. Here are their hours and contact information: <https://community.macmillan.com/docs/DOC-6915-students-still-need-help>

Webcourses Quizzes (10%):

- Each chapter will have a 5 question online quiz available to students **within Webcourses**.
- The **lowest quiz grade will be dropped** automatically. If a student misses taking a quiz during the open window, the missed score will be counted as a "0" and dropped automatically. Keep in mind, after missing one quiz, all other quiz scores will count towards your grade.
- Due dates for each quiz can be found in the course schedule below and can be seen in each chapter's module within Webcourses. Quizzes will be open and available on a rolling basis throughout the semester.
- **Important: Students will receive NO credit for a quiz after the due date has passed.**
- Quizzes will be automatically graded and scores posted in Webcourses.
- Students will be allowed **1 attempt** for each quiz. There is no set time limit for taking the quiz but they will need to be completed by each due date. *Note: Quizzes close at 11:59 PM on the due date.*
- It is expected that students will complete the quizzes independently from other students although they are considered "open note" quizzes.
- The correct responses will become available for review after the due date has passed for a given quiz.

Important Information for both Sapling Assignments and Webcourses Quizzes:

- Pay attention to when Sapling assignments and Webcourses quizzes are open and due for each chapter. You will NOT be routinely reminded about due dates in lecture.
- There will be NO make-up assignments or quizzes allowed unless a student can provide documentation affecting them longer than 1 week (e.g. extended hospitalization, sequestered jury duty, etc.) *that prevented computer access*.
- Having computer or internet connection issues will NOT be considered a valid excuse for missing assignments or quizzes. Students are therefore encouraged to complete the assignments and quizzes well before the due date time to allow for potential technical issues.

End of Chapter Problems:

- The textbook provides End of the Chapter problems that students can use to practice the lecture material. Some of these questions but not all are incorporated in the Sapling Learning Homework assignments.
- The textbook problems are to be considered **optional** and students will NOT be expected to turn them in or to receive credit for them.
- Questions that have an asterisk (*) have their solutions in the textbook's appendix.

Classroom Conduct: By enrolling at UCF, all students have agreed to abide by the Golden Rule. Please become familiar with this document at: <http://www.goldenrule.sdes.ucf.edu>

This is a large class with inherent challenges due to its size. For the best learning environment for everyone, please:

- Arrive and depart on time
- **No talking during class!**
- Place cell phones on vibrate
- Laptop use is allowed for course related use only.
- Tape recording of lectures is permitted.

Academic Integrity:

- Cheating on lecture exams will not be tolerated.
- Penalties for cheating can include:
 - A failing grade on an assignment or in the course
 - Suspension or expulsion from the university
 - A "Z Designation" on a student's official transcript indicating academic dishonesty
 - For more information about the Z Designation, see <http://z.ucf.edu/>
 - In BSC 2010, you will receive a ZF for academic dishonesty
- Students who are caught cheating will be immediately referred to the UCF Disciplinary Action Committee.
- Cheating includes but is not limited to:
 - Copying from another student's exam

Disability Access Statement: The University of Central Florida is committed to providing reasonable accommodations for all persons with disabilities.

- This syllabus is available in alternate formats upon request.
- Students with disabilities who need accommodations in this course must contact Dr. Diercksen at the beginning of the semester to discuss needed accommodations in the classroom. Students who need accommodations must be registered with Student Accessibility Services, Student Resource Center Room 132, phone (407) 823-2371, TTY/TDD only phone (407) 823-2116.
- Students who qualify for an alternative exam taking environment are responsible for scheduling their exams with SAS in the time window required by SAS (typically at least one week from the exam date).
 - for another student for an exam
 - Falsifying information such as notes related to absences
 - Completing another student's online quizzes for them or working together to complete the quizzes.

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Academic Help:

- Tutoring and Supplemental Instruction (SI) sessions are available through the Student Academic Resource Center (SARC).
- Announcements will be made when regularly scheduled tutoring sessions will be held as well as special review sessions when appropriate.
- Please ask for help if you need it and don't wait until it's too late!

Tentative Lecture and Exam Schedule Spring 2018 (subject to change): *Note: All chapter content and numbers refer to the 6th Edition of the textbook.*

Date	Lecture Topic	What's Due?
M 1/8	Introduction to Course & Genetics Background	
W 1/10	Chapter 2: Chromosomes & Cellular Reproduction	
F 1/12	Continue Chapter 2	
M 1/15	Campus closed (MLK Day)	
W 1/17	Chapter 3: Basic Principles of Heredity	
F 1/19	Continue Chapter 3	<i>Chapter 2 Sapling Due Chapter 2 Webcourses Quiz Due</i>
M 1/22	Chapter 4: Sex Determination & Sex-linked Characteristics	<i>Chapter 3 Sapling Due</i>
W 1/24	Continue Chapter 4	<i>Chapter 3 Webcourses Quiz Due</i>
F 1/26	Chapter 5: Extensions & Modifications of Basic Principles	<i>Chapter 4 Sapling Due</i>
M 1/29	Continue Chapter 5	<i>Chapter 4 Webcourses Quiz Due</i>
W 1/31	Continue Chapter 5	
F 2/2	Chapter 6.2: Pedigree Analysis	<i>Chapter 5 Sapling Due</i>
M 2/5	Catch Up & Review for Exam 1	<i>Chapter 5 Webcourses Quiz Due Chapter 6 Sapling Due</i>
W 2/7	Exam 1 <i>Note: Content announced in class & in Webcourses.</i>	
F 2/9	Chapter 7: Linkage, Recombination & Eukaryotic Gene Mapping	<i>Chapter 6 Webcourses Quiz Due</i>
M 2/12	Continue Chapter 7	
W 2/14	Continue Chapter 7	
F 2/16	Continue Chapter 7/Problem Solving	
M 2/19	Chapter 25: Populations Genetics	<i>Chapter 7 Sapling Due</i>
W 2/21	Continue Chapter 25	<i>Chapter 7 Webcourses Quiz Due</i>
F 2/23	Continue Chapter 25/Problem Solving	
M 2/26	Catch up and Review for Exam 2	<i>Chapter 25 Sapling Due</i>
W 2/28	Exam 2 <i>Note: Content announced in class & in Webcourses.</i>	
F 3/2	Chapter 10: DNA: The Chemical Nature of the Gene	<i>Chapter 25 Webcourses Quiz Due</i>
M 3/5	Continue Chapter 10	
W 3/7	Chapter 11.1-11.2: Chromosome Structure <i>Note: No Chapter 11 Sapling or Quiz.</i>	<i>Chapter 10 Sapling Due</i>

F 3/9	Chapter 12: DNA Replication & Recombination	<i>Chapter 10 Webcourses Quiz Due</i>
M 3/12-3/18	SPRING BREAK	
M 3/19	Continue Chapter 12	
W 3/21	Chapter 13: Transcription	<i>Chapter 12 Sapling Due</i>
F 3/23	Continue Chapter 13	<i>Chapter 12 Webcourses Quiz Due</i>
M 3/26	NO CLASS	<i>Chapter 13 Sapling Due</i>
W 3/28	Catch up and Review for Exam 3	<i>Chapter 13 Quiz Due</i>
F 3/30	Exam 3 <i>Note: Content announced in class & in Webcourses.</i>	
M 4/2	Chapter 14: RNA Molecules & RNA Processing	
W 4/4	Chapter 15: Genetic Code & Translation	<i>Chapter 14 Sapling Due</i>
F 4/6	Continue Chapter 15	<i>Chapter 14 Webcourses Quiz Due</i>
M 4/9	Chapter 16: Control of Gene Expression in Bacteria	<i>Chapter 15 Sapling Due</i>
W 4/11	Continue Chapter 16	<i>Chapter 15 Webcourses Quiz Due</i>
F 4/13	Chapter 17: Control of Gene Expression in Eukaryote	<i>Chapter 16 Sapling Due</i>
M 4/16	Continue Chapter 17	<i>Chapter 16 Webcourses Quiz Due</i>
W 4/18	Catch up and Review for Exam 4	<i>Both Chapter 17 Sapling & Chapter 17 Webcourses Quiz Due</i>
F 4/20	Exam 4 <i>Note: Content announced in class & in Webcourses.</i>	
M 4/23	Review for Final Exam	

Final Exam Schedule:

11:30 AM Lecture's (section 1): Final Exam Day and Time: Wednesday, April 25th at 10:00 AM-12:50 PM

12:30 PM Lecture's (section 2): Final Exam Day and Time: Friday, April 27th at 10:00 AM-12:50 PM

Note: Unless you are given formal permission to change your Final Exam time, you must take your Final Exam with your registered section.