

# PCB 3063 - Genetics - Fall 2017

(Section 0001) Tues & Thurs 10:30 – 11:50 am (CB2-101)

(3 credit hours)

**Instructor:** Dr. Cynthia Bayer  
**Email:** Webcourses

**Office:** BIO 202D    **Phone:** 407-823-1460  
**Hours:** Tues & Thurs 12:00 – 2:00 pm

---

**Graduate Teaching Assistant:** Johnathan Napier    **Office Hours:** BIO 211    Wed 12:00 – 2:00 pm

---

**Undergraduate Assistants:** Ayssel Tanbari & Bryan Jimenez    **Office Hours:** BIO 201    TBD

---

**Course Objectives:** 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.

**Course Prerequisites:** This is an upper division class designed 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).

---

**Required Textbook:** Genetics - A Conceptual Approach, 5<sup>th</sup> ed., Pierce (2014) W.H. Freeman and Co. (Loose-leaf ISBN: 978-1-4641-5085-2 or Hardcover ISBN: 978-1-4641-0946-1)

**Required iClicker:** We will use the iClicker classroom response system on a regular basis for class points. You must purchase a physical **iClicker remote** or **iClicker Reef subscription** to bring to every class lecture. It would be wise to bring extra batteries for your remote. The purchase of a remote/Reef is NOT optional; it is an integral part of this course. You must register for this course by **AUG 31**.

TO REGISTER YOUR REMOTE: in **Webcourses** click on the iClicker tab. Follow the instructions to type in your remote ID (which is directly under the barcode on the back). You may use either a multiple choice-only **iClicker+**, or the alphanumeric-capable **iClicker2** remote, as I will only utilize multiple-choice responses to questions in this course. TO REGISTER IN iCLICKER REEF: Purchase an *iClicker Reef* subscription, enter your UCF NID in your Reef profile, find, and join our course.

## **Important Information for Financial Aid:**

- In order for me to document students' academic activity at the beginning of each course, please complete the **Syllabus Quiz**, found in our Webcourse's Quiz section, by **5:00 pm AUG 25**. 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 Syllabus Quiz.

**Course website:** Access our course website at Webcourses@UCF via the myUCF portal using your NID and password. There you will find a folder of **Lecture PowerPoints** for you to print and bring to lecture. These PowerPoint slides are sized to be legible when printed at 6 slides per page. You will also find links to the **syllabus**, **homework problems**, **quizzes**, **websites**, and **grades**.

**Communication:** I will communicate with students via Announcements or email within Webcourses. I will attempt to respond to all emails within 24 hours, Monday-Friday.

## Course Grade:

60% = Best 3 out of 4 lecture exams (100 points/exam)

20% = Required Final Exam (100 points)

10% = Quizzes @ Webcourses

10% = iClicker points - class participation = 3 pts

- graded questions: correct = 1 pt., incorrect = 0.25 pt.

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

A = 90-100%

B = 80-89%

C = 70-79%

D = 60-69%

F = 59% and below

**Lecture Exams:** There will be 4 lecture exams, each worth 100 points. The exams will be based on material covered in lecture, including some notes and diagrams that are not included in the PowerPoint slides available at our Webcourses website. Therefore, students who routinely skip lectures will be at a significant disadvantage. The lowest grade of the 4 lecture 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 Final Exam will be given in our lecture classroom, CB2-101 according to the UCF Final Exam Schedule for Fall 2017, on **Tues Dec 5, 10:00 am - 12:50 pm.**

**Quizzes:** A short quiz will be assigned in Webcourses for each chapter. The opening and due dates for each quiz will be announced in class. Quizzes will be automatically graded and posted in Webcourses. After the **DUE DATE** for any quiz has passed, you will not be able to get credit for that quiz. The lowest grade of all quizzes will be dropped automatically. Quizzes make up **10%** of your course grade.

**iClicker:** The points earned from iClicker class participation and graded questions each day will comprise **10%** of your course grade. For each class period, 3 points are earned for participation (= answering all questions, or all but one question) plus additional points for graded questions (1 point for each correct answer and 0.25 point for each incorrect answer).

**Homework:** End-of-Chapter questions will be assigned as homework for each chapter. These questions will be listed at the end of each chapter's PowerPoint presentation, as well as on the Homework page at Webcourses. You will not submit homework answers or receive credit, but are strongly encouraged to complete these problems for a better understanding and review of the concepts discussed in lecture.

### **Taking Exams:**

- All exams will use scantrons that will be provided with each exam. Lecture exams will consist of both multiple choice and short answer questions.
- You will need to bring a **#2 pencil**, your **UCF ID**, and know your **PID** to fill in the scantron.
- If you arrive **within 15 minutes** after the start of an exam, you will be allowed to take the exam. However, you must turn in the exam paper at the scheduled end of the exam period. You will not be allowed extra time unless a documentable emergency has occurred (see below).

**Missed Exams:** If a student misses an exam for an unexcused event, that will be the dropped grade.

### **Make-Up Exams:**

- A make-up exam for any of the 4 lecture exams 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 me documentation that contains your name and the date affected **within 1 week prior to** the exam date.
  - Students are responsible for arranging with me a time to take the makeup exam so that makeup exams are completed before exam solution keys are released to all students.
- If you miss an exam for any other legitimate documented reason that circumstances beyond your control prevented you from taking the exam (including, but not limited to, major illness, serious family emergency, death in the family, jury duty, etc.), you will receive a zero for your missed exam and that will be the exam automatically dropped from your final grade calculation, initially.
  - If I approve the absence based on your documentation from an appropriate authority (doctor, police, judge, etc.) **provided within 1 week after missing the exam**, your Final Exam grade may substitute for this missed exam if your final course grade is affected by missing the exam.
  - Your lowest lecture exam score will still be dropped even with the Final Exam substitution.
- For all other situations (e.g. forgetting there was an exam, oversleeping, arriving > 15 min late):
  - You will receive a zero on this exam, and it will most likely be the lowest score dropped from your final course grade.
  - You do not need to provide any documentation for the missed exam in order for it to be dropped from your grade.
  - You will **NOT** be eligible for the Final Exam grade substitution for these undocumented or unapproved absences.

### **Reviewing Exams:**

- Scantrons and exams will **NOT** be returned to students, but exam solution keys will be posted in Webcourses.
- If you wish to receive a printed copy of your individual exam report sheet (with all correct and incorrect responses indicated), you must make a request in person with Dr. Bayer during office hours **within 2 weeks** of an exam grade being posted in Webcourses.
  - Once the 2 week window has closed, you may **NOT** review your individual exam for the rest of the semester.
  - You must resolve **any** grade concerns within the 2 week window as well.

**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>

- Because of the challenges inherent with a class of this size, **please**
  - arrive and depart on time
  - refrain from talking during class
  - place cell phone on vibrate
- Students who fail to follow these basic courtesy rules will be asked to leave.
- Laptops are allowed for course-related use only! If I receive complaints that your YouTube or Netflix viewing interferes with other students' ability to concentrate and learn in this classroom, I WILL PROHIBIT ALL LAPTOP USE in the classroom.
- Audio recording of lectures is permitted.

**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. Penalties can include a failing grade in an assignment or in the course, suspension or expulsion from the university, or a "Z Designation" on a student's official transcript indicating academic dishonesty (see <http://goldenrule.sdes.ucf.edu/zgrade>). A student caught cheating will immediately be referred to the UCF Disciplinary Action Committee at the Office of Student Conduct <http://www.osc.sdes.ucf.edu/>

- Cheating includes but is not limited to:
  - Copying from another student's exam
  - Signing in for another student for an exam
  - Falsifying information such as notes related to absences
  - Using another student's iClicker remote or Reef app for them in their absence

**Course Accessibility:** It is my goal that this class be an accessible 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 meet with 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.

**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, and financial challenges. You can also e-mail [ucfcares@ucf.edu](mailto:ucfcares@ucf.edu) with questions or for additional assistance. 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.

## iClicker Instructions

You have the option of using any physical **iClicker remote** or the **iClicker Reef** polling app downloaded onto your mobile device from iTunes or Google Play. You may purchase a remote at the UCF Bookstore or online at <https://www.iclicker.com/>. Instructions are on the back of the remote.

- **Be sure to consider which of your other courses may require an iClicker2 remote or Reef.** I will only ask Multiple Choice questions in class. However, you may need an iClicker2 remote or Reef subscription for answering numeric/alphanumeric questions in another course.
- **I will enable iClicker Reef polling in this course, on a trial basis.** Let's see how it works for us.

**INSTRUCTIONS FOR iCLICKER COURSE REGISTRATION:** iClicker is a response system that allows you to respond to questions I pose during class, and you will be graded on that feedback and/or your in-class participation. In order to receive this credit, you will need to register your iClicker **remote** in Webcourses or register your NID in your **iClicker Reef** profile by **AUG 31**. You must have come to class at least once and voted on at least one question in order to complete this registration.

- Log into your **Webcourses** account. Choose our course and choose the iClicker link in the left hand toolbar. Follow the instructions to type in your remote ID (under the barcode on the back).
- It is **NOT** necessary to register your remote at iClicker.com as well. If you register a used remote on their national database, you may be charged a fee.
- Please choose **CB** (my initials) as the radio frequency to communicate with my receiver.

### **iCLICKER POLICIES:**

**Cheating policy:** I consider bringing a fellow student's iClicker remote to class to be cheating and a violation of UCF's *The Golden Rule* of Conduct. If you are found with a remote or Reef app other than your own or have votes in a class that you did not attend, you will **forfeit all** clicker points and face additional disciplinary action.

**Forgotten remote policy:** Note that we will be using iClicker in almost every class and iClicker points will make up 10% of your final grade. Please remember that it is your responsibility to come prepared to participate with a functioning remote every day. However, I do realize that unforeseen circumstances do arise, and for this reason I will drop the **single** lowest iClicker day from your total participation grade.

**Broken/lost remote policy:** If you have lost or broken your iClicker remote, you will have to purchase another one. Please email me with your new remote ID so that I can manually register your new remote.

**Awarding points policy:** The iClicker software has the final say in awarding points. **DO NOT** stop by the lectern, email after class, or come to office hours to ask for points not awarded. If you were in class and using your registered remote or Reef app properly, you will see a check mark, and my receiver will record your response. If there is an issue with your remote or app, you must address it immediately (e.g. re-register, change the batteries, ensure you have the right frequency, etc.) in order to earn clicker points.

- There are **NO** loaner remotes available.
- There are **NO** alternative methods (e.g. turning in answers written on paper) for recording your responses other than using your iClicker remote or iClicker Reef app.

*Note that the instructor reserves the right to make changes to the syllabus or other aspects of the course at anytime. These changes will be announced in class.*

## Genetics Lecture Schedule - FALL 2017

Aug 22: Introduction & *Chapter 1*

Aug 24: *Chapter 2* Chromosomes & Cellular Reproduction      DROP deadline Thurs, Aug 24 11:59pm  
ADD deadline Fri, Aug 25 11:59pm

Aug 29: *Chapter 3* Basic Principles of Heredity

Aug 31: *Chapter 3*

Sep 05: *Chapter 4* Sex Determination & Sex-linked Characteristics

Sep 07: *Chapter 4* & *Chapter 5* Extensions & Modifications of Basic Principles

Sep 12: *Chapter 5*

Sep 14: **Exam 1 (Chapters 1, 2, 3, 4, 5)**

Sep 19: *Chapter 6* Pedigree Analysis & *Chapter 7* Linkage, Recombination & Gene Mapping

Sep 21: *Chapter 7*

Sep 26: *Chapter 8* Chromosome Variation

Sep 28: *Chapter 25* Population Genetics

Oct 03: *Chapter 10* DNA: The Chemical Nature of the Gene

Oct 05: *Chapter 10*

Oct 10: **Exam 2 (Chapters 6, 7, 8, 25, 10)**

Oct 12: *Chapter 11* Chromosome Structure

Oct 17: *Chapter 12* DNA Replication

Oct 19: *Chapter 13* Transcription

Oct 24: *Chapter 13*

Oct 26: *Chapter 14* RNA Molecules & RNA Processing

Oct 31: *Chapter 15* Genetic Code & Translation

Nov 02: **Exam 3 (Chapters 11, 12, 13, 14, 15)**

WITHDRAWAL deadline  
Mon, Oct 30 11:59pm

Nov 07: *Chapter 16* Control of Gene Expression in Bacteria

Nov 09: *Chapter 17* Control of Gene Expression in Eukaryotes

Nov 14: *Chapter 18* Gene Mutations & DNA Repair

Nov 16: *Chapter 19* Molecular Genetic Analysis & Biotechnology

Nov 21: *Chapter 19*

**Nov 23: Thanksgiving**

Nov 28: Chapter 19

Nov 30: **Exam 4 (Chapters 16, 17, 18, 19)**

Dec 05: **Comprehensive Final Exam** (Tuesday 10:00 AM - 12:50 PM)