Biology 305-01 Genetics Fall 2018

Meeting time and Place: M-W-F 11-11:50am, RITA 101

Instructor: Bridget Piculell (piculellb@cofc.edu, RITA 205)

Office hours: By appointment (contact me by email or talk to me after class)

Overview

The intention of this course is to provide you with a foundation in genetics for the rest of your curriculum in biology. It will build on material from BIOL111 and BIOL112.

We will review Medelian genetics, and transmission genetics broadly. We will also work to increase your understanding of the molecular machinery underpinning the transmission and expression of genes. Also interspersed among the course will be information about past, current, and future technologies applied to genetics.

Textbook: Genetics, a conceptual approach 6th edition (Pierce)

Poll Everywhere

To encourage participation in class, I will periodically ask questions using Poll Everywhere. Rather than use a dedicated classroom device (and paying for it) we are going to use Poll Everywhere (www.polleverywhere.com). With this service, you can respond to questions I ask in class using your computer, tablet, or phone. The phone may be particularly useful. Anybody who has a texting plan can respond to questions in class. You can also register online.

How to Do Well in BIOL 305

Attendance: Arrive on time to attend all lectures and be an active participant in class. If you must miss a given lecture, arrange to get notes from a classmate.

In-Class:

1. Stay attentive. Listen and think about the material as lecture progresses.
2. Take good notes. Note-taking is a skill that takes practice to perfect. Work to identify and jot down important concepts and supporting key words; strive to be brief! It is inefficient and unnecessary to record every word from lecture slides.
3. Actively think and ask questions. If you don't understand a concept or if it is unclear to you what you should be learning from a particular lecture or how concepts fit together, then the best time to resolve your confusion is in class.
4. Participate. Ask questions if you have them!

5. Respect the learning environment. Do not behave in a way that is disruptive to other members of the classroom community (such as by talking, sleeping).

Out-of-Class:
Study. Plan to devote multiple hours per week to studying biology outside of class. There are many ways to learn, but the goal is to understand the main concepts and support them with facts.
Be prepared for lecture. Read the relevant sections from your textbook before coming to lecture. After lecture, go back and read parts of the chapter that are relevant to lecture and work to synthesize material presented in lecture. You will likely have to re-read sections to develop a working knowledge of the concepts.
Review, rewrite, and refine your notes. After class, revisit your notes to fill in gaps and to synthesize facts and concepts before moving on to new material. Having a grasp of material from previous lectures will make easier work of learning the new material and save you from cramming before exams.
Get help when you need it. Seek answers immediately to questions that you think of during lecture or while reading and organizing your notes. I am happy to meet with you by scheduled appointment to discuss questions about the material.

Course Policies
Academic Integrity: On all work submitted for credit by CofC students, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment". The legal code of the College specifically prohibits plagiarism, cheating, bribing, conspiracy, misrepresentation, and fabrication. If it is proven that any student has committed any of the above infractions of the honor code, then that student will automatically fail the course with an XF. In addition, violations of the Academic Honesty Guidelines shall result in judicial action. Students should be aware that unauthorized collaboration (working together without permission) is a form of cheating.

Attendance: You are expected to attend all classes because it is to your benefit to hear lecture firsthand, and you must be in class to earn participation points, which make up a substantial part of your grade. There may be an occasion, however, when you are not able to make it to lecture. There will be quizzes and worksheets given during class periodically. These activities will have questions about subject matter that we have already covered, and are worth participation points. If you are not here to take the quiz or do the worksheet, you will not earn those points. You should not miss class unless you absolutely have no other choice. If you have a medical or family crisis, or are involved in College sanctioned activities that require you to miss class, meet with Dr Piculell to discuss your circumstances.

OAKS: You have an assigned a College ID and an associated password for access to online resources, including the College of Charleston's course management system known as OAKS. Enrollment in this class provides you with access to course information posted on OAKS. I will post quizzes, class announcements, grades, study questions, and other important information on OAKS regularly each week throughout the term; check often for this important information. If you have trouble with OAKS, please email or see Dr. Piculell.

Accommodations for Disabilities: To request classroom accommodation, you must first register with the Center for Disability Services at the beginning of the semester. This office will provide

you with documentation that you will then provide to us when you request accommodation. For more information, see http://disabilityservices.cofc.edu/

Food insecurity: Any student who has difficulty affording groceries or accessing sufficient food to eat every day, or who lacks a safe and stable place to live, and believes this may affect their performance in the course, is urged to contact the Dean of Students for support. Furthermore, please notify the professor if you are comfortable in doing so. This will enable them to provide connection to any resources that they may have.

Contacting Dr. Piculell: Students are welcome to talk with me briefly as needed after class, but it is most productive to discuss issues or the material at length. Send an email to make an appointment. When sending an email, please be courteous and professional by 1) identifying yourself and the section 3 in which you are enrolled in your note or the subject line, 2) using proper English and complete sentences (no texting shorthand please), and 3) NOT opening your note with "Hey."

Email: I routinely communicate with the class by email. Sometimes I will need to get a hold of you specifically and it will be important that you get the note. I will use the email address that the College provides to me, so it is important that you are able to access that account.

Grading

Where lecture points come from	**Point value**
Lecture participation*	60
HW assignments	50
OAKS quizzes	100
Exam 1	100
Exam 2	100
Exam 3	100
Final exam (comprehensive)	100
MAXIMUM POINTS POSSIBLE	610

* based strictly on receiving answers on your in-class quizzes or worksheets

% of Possible Points:
>93% = A
90-92% = A
87-89% = B+
83-86% = B
80-82% = B
77-79% = C+
73-76% = C

70-72% = C
60-69% = D

Description of Assessment:
Lecture participation: Occasionally we will begin or end class with a short quiz based on material that we have already covered. By taking the quiz, you will receive 5-10 points for participation for that day. I WILL NOT be grading the questions on the quiz, rather they are to help you assess where you are with your studying on the current material. Answers to the quizzes will be posted on OAKS, and will be a useful study guide for the exams. There will also be occasional in-class worksheets, worth 5- 10 points each.

HW Assignments: Two homework assignments will be given throughout the semester, each worth 20 points. The timeline and content of the HW assignments will be announced during the semester.

OAKS quizzes: There will be quizzes/practice questions posted on OAKS once a week on Friday (during weeks with no exam), based on the material covered in lecture during that week. Quizzes are worth 10 points each.

Exams: Exams are based on lecture material (which is derived from the textbook) and will consist of multiple-choice, short-answer, and true/false questions, each usually worth 2 points for a total of 100 points. The comprehensive final exam will take the same form as regular term exams, but will cover all topics from the semester (75% of exam), as well some new material from the last weeks of class (25% of exam). *For each exam, you will need to provide your own scantron and number 2 pencil*.

Exam Policy: Three regular term exams are scheduled for this semester; all students are expected to be in class on these dates with an unused scantron and functioning pencil. We will have a final exam (25% new material, 75% comprehensive) during finals week. **Please be aware that there are very few valid reasons for missing an exam. With formal documentation from the Undergraduate Dean's Office of a valid reason for missing the exam, a student can make up a regular-term exam within one week of the missed test. It is the responsibility of the student to engage contact with the Instructor and arrange for a make-up exam. A make-up exam may take the form of multiple choice, short-answer, or essay questions, and may be written or oral, at Dr. Piculell's choosing**.

Proposed lecture schedule. *Schedule will be updated in class and on OAKS as we progress throughout the semester. Check for updates!*

WEEK	DATES	LECTURE
1	Aug 20-24	Introduction to course Ch 1: Introduction to genetics
2	Aug 27-31	Ch 1 cont Ch 2: Chromosomes and cellular reproduction
3	Sept 3-7	Ch 3: Basic principles of heredity Ch 4: Sex determination and sex-linked characteristics

4	Sept 10-14	Ch 5: Extensions and modifications **Exam 1: Friday September 14th, Chapters 1-5**
5	Sept 17-21	Ch 6: Pedigree analysis Ch 7: Linkage, recombination No class Friday Sept 21st
6	Sept 24-28	Ch 8: Chromosome variation Ch 10: DNA Ch 11: Chromosome structure and organelle DNA
7	Oct 1-5	Wrap up chapters 6-8,10-11 **Exam 2: Friday October 5th, Chapters 6-8,10-11**
8	Oct 8-12	Ch 12: DNA replication and recombination Ch 13: Transcription
9	Oct 15- 19	Ch 14: RNA molecules Ch 15: The genetic code and translation
10	Oct 22-26	Ch 15 cont Ch 18: Gene mutations and DNA repair
11	Oct 29-Nov 2	**Exam 3: Wednesday Oct 31, Chapters 12-15, 18** Ch 24: Quantitative genetics
12	Nov 5-9	FALL BREAK! NO SCHOOL Nov 5-6 Ch 24 cont
13	Nov 12-16	Ch 24 cont Ch 25 Evolutionary genetics
14	Nov 19-23	Ch 25 Continued THANKSGIVING BREAK! NO SCHOOL Nov 21-23
15	Nov 26-30	Ch 26 Evolutionary genetics
16	Dec 3-7	Monday Dec 3: last day of class! **Friday Dec 11: FINAL EXAM 12-3PM RITA 101**