

BSC 2010C - Honors General Biology - Spring 2020

Section 205: MWF 11:30 – 12:20 Lecture (BHC-127), Lab Section 212: Tues 8:30 – 11:20 (BIO-211)

Instructor: Dr. Cynthia Bayer

Office Hours (BIO 202D): M & W 12:30 – 2:00 pm

Email: Webcourses *Inbox*

Course Description:

Credit Hours: 4 (3,3)

Course Prerequisites: Permission of Honors College.

Purpose of the Course: This course introduces the study of living organisms, preparing students with the foundational concepts to advance to upper level Biology courses. Basic principles of the chemistry, molecules, and organelles of life will be covered, emphasizing structure-function relationships. Students will learn about the inheritance and molecular nature of genetic information and the influence of the environment on evolutionary change.

Course Objectives:

- Understand the basic principles of the chemistry of life
 - Identify cellular structures and understand their functions in the cell
 - Follow the flow of energy in cellular respiration and photosynthesis
 - Learn the origins of and be able to apply Mendelian laws of inheritance
 - Understand the molecular nature, replication, and expression of genetic information
 - Recognize evolutionary principles as the foundation underlying all aspects of biology.
 - *In the Laboratory:* Hands-on exploration of biological materials and processes. Students will use research grade laboratory equipment - light microscopes, micropipetors, centrifuges, spectrophotometers, gel electrophoresis chambers, and model genetic organisms - to visualize, manipulate, quantify, and investigate biological questions.
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Required:

- *MasteringBiology** with Pearson eText *Campbell BIOLOGY, 11th Edition*.
- Lab Notebook: 3-ring binder to store Laboratory Exercises downloaded from Webcourses
- iClicker remote or REEF subscription - for graded participation (see *iClicker Instructions* below)

Recommended:

How to Study Science, 4th Edition. Drewes, F. & Milligan, K. (2003) McGraw-Hill Co.

* *MasteringBiology* is an on-line resource from textbook publisher Pearson that includes the *Campbell BIOLOGY* eText, practice tests, videos, animations, and other study aids. Modules will be assigned as graded **homework**. Instructions for purchasing access to *MasteringBiology* and **UCF First Day Opt-In** are available at our Webcourse site. *Google Chrome* is the recommended browser to access *MasteringBiology* course materials.

Course website: Access our course website at Webcourses@UCF via the myUCF portal. You will find a link to *MasteringBiology* in **Modules** and links to **Lecture PowerPoints** and **Lab Exercises** to print and bring to lecture and each laboratory session. Note: some labs have more than one document.

Classroom Conduct: Please use common courtesy in class by arriving and departing on time, refraining from talking during class when I am talking, and silencing cell phones and other electronic devices.

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, or suspension or expulsion from the university. Students are expected to familiarize themselves with and follow the University's Rules of Conduct <http://www.osc.sdes.ucf.edu/>.

Academic Activity: In order to document your academic activity in this course for the UCF Registrar's office, please complete the **Syllabus Quiz** on our Webcourses site by **January 10**, or as soon as possible after adding the course. Failure to do so may result in a delay in the disbursement of your financial aid.

Grading: You receive one grade for this **4 credit** course based on your combined lecture & lab grades.

60% = Best 4 out of 5 lecture exams (100 points/exam x 4 exams)

15% = Laboratory (participation, lab notebook, pop quizzes, and a laboratory presentation)

15% = Assessments (pop quizzes, worksheets, MasteringBiology homework)

10% = iClicker points (participation = 3 pts. graded questions: correct = 1 pt., incorrect = 0.25 pt.)

Letter grades for the semester will be awarded using the following scale:

<u>Grade range %</u>	<u>Letter Grade</u>	<u>GPA</u>
90 - 100	A	4.0
87 - 89	A-	3.75
84 - 86	B+	3.25
80 - 83	B	3.0
77 - 79	B-	2.75
74 - 76	C+	2.25
70 - 73	C	2.0
67 - 69	C-	1.75
64 - 66	D+	1.25
60 - 63	D	1.0
below 60	F	0

Lecture Exams: There will be 4 lecture exams plus a COMPREHENSIVE final exam, each worth 100 points. All exams will be based on BOTH lecture material, assigned readings, and the laboratory exercises. Your lecture exam point total will be based on the **best 4 out of 5** lecture exam scores. The score of the **final exam** will be dropped if it turns out to be the lowest of your scores, or you may choose not to take the final exam. If a student misses an exam for an excused event, that will be the dropped grade. If a student misses a second or subsequent exam due to an excused event, a make-up exam will be given following the final exam or at a mutually convenient time to be arranged. For all excused events, a student must present acceptable documented evidence from an appropriate authority (doctor, police, judge, etc.) that circumstances beyond your control prevented you from taking the exam, or that you were required to participate in official UCF business. A doctor's note must be on letterhead with a contact phone number and must indicate that a medical condition was treated. Documented evidence must be presented to me within 24 hours of the start of the exam. In the absence of acceptable documentation, a grade of 0 will be assigned for the second or subsequent missed exam.

Lecture exams will consist of ~75% multiple choice and ~25% short answer questions.

Taking Exams: You will need to bring your UCF ID card and know your UCF ID number for all exams. If you arrive late to an exam, 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.

Reviewing Exams: Grades will be posted at our Webcourses site. Exams will not be returned, but can be reviewed in my office, during regularly scheduled office hours, until the next exam (e.g., exam 1 can be reviewed up until the time that exam 2 is administered).

Extra Credit: You can earn up to 20 points of Extra Credit to be added to the Exam portion of your grade by submitting a Report on a *Science magazine* Journal research article or review. More information is on our Webcourses site.

Course Accessibility: It is my goal that this class be an accessible and welcoming experience for all students. 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 (Ferrell Commons 185; 407-823-2371; sds@ucf.edu) 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://www.sarc.sdes.ucf.edu>). SARC provides students with free individual and small-group tutoring for Biology 2010 and 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 <http://cares.sdes.ucf.edu/students> 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 with questions or for additional assistance. You can reach a UCF Cares staff member 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 to speak directly with a counselor 24/7 at 407-823-2811, or please call 911.

Campus Safety: Emergencies on campus are rare, but if one should arise in our class, we will all need to work together. Everyone should be aware of the surroundings and familiar with some basic safety and security concepts. Please see the *Campus Safety Link* on our Webcourse for more information.

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.”

Lecture Dates 2020

Weekly Lab Exercise

Jan 06: *Course introduction*

Lab 1. *Daphnia* Heart Rate

Jan 08: Chapter 1 - *Life*

Jan 10: Chapter 2 - *Chemical Context*

DROP deadline Thurs, Jan 09, 11:59 pm

ADD deadline Fri, Jan 10 at 11:59 pm

Jan 13: Chapter 2/3 - *Water*

Lab 2. Solutions/Dilutions/Spectrophotometry

Jan 15: Chapter 3

Jan 17: Chapter 4 - *Carbon*

Jan 20: **MLK Holiday**

Lab 3. Standard Curve Hemoglobin

Jan 22: Chapter 5 - *Large Biomolecules*

* Jan 24: Chapter 5

Jan 27: **Exam 1 (Chapters 1 – 5)**

Lab 4. Enzyme Activity

Jan 29: Chapter 6 - *The Cell*

Jan 31: Chapters 6

Feb 03: Chapter 6/7 - *Membranes*

Lab 5. **Lab Results Presentation**

Feb 05: Chapter 7

Feb 07: Chapter 8 - *Metabolism*

Feb 10: Chapter 8

Lab 6. Electrophoresis I

Feb 12: Chapter 9 - *Cellular Respiration*

Feb 14: Chapter 9

Feb 17: Chapter 9/10 - *Photosynthesis*

Lab 7. Electrophoresis II & **Lab Notebook check**

* Feb 19: Chapter 10

Feb 21: **Exam 2 (Chapters 6 – 10)**

Feb 24: Chapter 12 - *Cell Cycle & Mitosis*

Lab 8. Cell Cycle & Mitosis

Feb 26: Chapter 12

Feb 28: Chapter 13 - *Meiosis*

Mar 02: Chapter 13

Lab 9. *Drosophila* Genetics

Mar 04: Chapter 14 - *Mendel and the Gene Idea*

Mar 06: Chapter 14

Mar 09 – 14: **Spring Break**

WITHDRAWAL deadline Fri, Mar 20 at 11:59 PM

* *Due date for optional **Extra Credit** report*

Mar 16: Chapter 14
Mar 18: Chapter 15 - *Chromosomal Inheritance*
Mar 20: Chapter 15

Lab 10. *Drosophila* Polytene chromosomes

* Mar 23: Problems 14/15
Mar 25: **Exam 3 (Chapters 12 - 15)**
Mar 27: Chapter 16 - *Molecular Basis of Inheritance*

Lab 11. Human Phenotypes

Mar 30: Chapter 16
Apr 01: Chapter 17 - *From Gene to Protein*
Apr 03: Chapter 17

Lab 12. DNA Replication

Apr 06: Problems 16/17
Apr 08: Chapter 19 – *Viruses*
Apr 10: Chapter 22 - *Descent with Modification*

Lab 13. Transcription/Translation
Turn in Lab Notebook for grading

* Apr 13: Chapter 22
Apr 15: **Exam 4 (Chapters 16, 17, 19 & 22)**
Apr 17: Chapter 23 - *Evolution of Populations*

Apr 20: Chapter 23
Apr 22: **Comprehensive Final Exam** (10:00 am – 12:50 pm)

Laboratories: The labs are an integral part of this course and students are required to attend ALL laboratory sessions in the Biology Building (BIO 211). More than one unexcused laboratory absence will result in 0/100 points for the laboratory portion of your grade (i.e., you are allowed **one and only one** unexcused absence, and you will receive a "0" for that lab). Laboratory sessions cannot be made up. If you have a valid, documented reason for missing a laboratory session (from doctor, police, judge, official UCF business, etc.), you must contact me within 24 hours of the start of the lab. Attendance will be taken at the beginning of each lab. It is advisable to wear old clothes to lab. **Closed-toe shoes** are required by OSHA regulations. After the first week, if you are not wearing closed-toe shoes you will be asked to leave, and an unexcused absence will be recorded. There will be no smoking, eating or drinking in the laboratory. Print the **Lab Exercises** on Webcourses@UCF to bring to each laboratory session.

The Laboratory component of the course is worth 15% of your course grade.

30 points - Laboratory notebook
15 points - Laboratory presentation
25 points - Quizzes
30 points - Participation

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 class or on Webcourses.

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. 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.
- You may choose to use the REEF app **OR** your remote, but **NOT both**.

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 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 **January 16**. You must have come to class at least once and voted on at least one question in order to complete this registration.

- If using a physical remote, log into our Webcourse 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 *Rules 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 **two** lowest iClicker days 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. 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.

iClicker Refunds and Exchanges: Unopened iClicker remotes can be returned to the UCF Bookstore for a full refund during the first week of classes with a receipt. iClicker REEF should have a 2-week free trial period.