

BSC 2010C - Honors General Biology - Spring 2024

Section 204: MWF 11:30 – 12:20 Lecture (BIO-212), Lab Section 212: Tues 8:30 – 11:20 (BIO-211)

Instructor: Dr. Cynthia Bayer

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

Email: Webcourses *Inbox*

Course Prerequisites: Permission of Honors College

Credit Hours: 4 (3,3)

Course Description: 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. Laboratory sessions provide opportunities for hands-on exploration of biological materials and processes.

Student Learning Outcomes: Successful students will demonstrate a broad understanding of the basic principles of biology, demonstrate an ability to apply information to new scenarios, and be able to draw connections between concepts. Students will be expected to demonstrate understanding of:

- basic principles of the chemistry of life
- sub-cellular structures and their functions in the cell
- the flow of energy in cellular respiration and photosynthesis
- application of Mendelian laws of inheritance
- the molecular nature, replication, and expression of genetic information
- evolutionary principles as the foundation underlying all aspects of biology
- *In the Laboratory:* Students will participate in experiments and demonstrations to visualize, manipulate, quantify, and investigate biological questions.

Students will be evaluated on meeting these objectives via participation in *iClicker* polling sessions during lectures, homework, quizzes, worksheets, lecture exams, and participation in laboratory exercises.

REQUIRED:

- *MasteringBiology** with Pearson eText *Campbell BIOLOGY, 12th Edition*.
- Lab Notebook: 3-ring binder to store Laboratory Exercises downloaded from Webcourses
- *iClicker Student* subscription - for graded participation

* *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 to opt-in to **UCF First Day Access** to *MasteringBiology* are available at the **Course Introduction & Getting Started** page. *Google Chrome* is the recommended browser to access *MasteringBiology* course materials.

iClicker: I will use *iClicker* polling daily in lecture. You are required to participate with the *iClicker Student* app on a smartphone, tablet, or laptop. Each day, 3 points are earned for participation (answering all but one question) plus additional points for graded questions (1 point for each correct answer and 0.25 point for each incorrect answer). Only a subset of questions will be graded each day. *The two lowest iClicker day scores will be dropped automatically.* See the link on our Webcourses homepage to create an *iClicker* account by **Fri, Jan 12**.

Academic Activity:

- To meet the registrar's requirement for documentation of your participation in this course, please complete the **Syllabus Quiz**, found in our Webcourse Quiz section, by **5:00 pm Friday, Jan 12**. 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 Course Expectations/Syllabus Quiz.

Course website: Access our course website at Webcourses@UCF via the myUCF portal. You will find links to the **Syllabus, Weekly Modules, MasteringBiology, Lecture PowerPoints, Lab Exercises, and Grades.**

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.

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, weekly quizzes)

15% = Assessments (lecture 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
60 - 69	D	1.0
below 60	F	0

Course Exams: 4 lecture exams plus a COMPREHENSIVE Final exam are each worth 100 points. All exams will be based on BOTH lecture material, assigned readings, homework and the laboratory exercises. The lowest score of all 5 exams will be dropped automatically. The score of the Final exam will be dropped if it turns out to be the lowest of your scores, or you may choose to not take the Final exam.

Taking Exams:

- Exams will consist of ~75% multiple choice and ~25% short answer questions.
- 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.

Excused Missed Exams:

- If an exam is missed due to an official, documented, University-accepted absence, a makeup exam will be permitted. 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 **1 week prior** to the scheduled exam date.
 - A make-up exam will be arranged at a mutually convenient time.
- 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 date and contact phone number and must indicate that a medical condition was treated or that a medical procedure or hospitalization occurred.
 - *If I approve your excuse*, a make-up exam will be arranged at a mutually convenient time.
- If a student is permitted to take a makeup exam, they will **not** be permitted to take a makeup for a second exam later in the semester.

Unexcused Missed Exams: If a student misses an exam for an unexcused event (e.g., forgetting there was an exam, vacations, family gatherings or weddings) 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: 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).

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>.

Students are prohibited from engaging in **Academic Misconduct**:

- a) 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.
- b) 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.
- c) 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.
- d) Falsifying or misrepresenting the student's own academic work.
- e) 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.
- f) Multiple Submissions: Submitting the same academic work for credit more than once without the express written permission of the instructor.
- g) Helping another violate academic behavior standards.
- h) Soliciting assistance with academic coursework and/or degree requirements. The solicitation of assistance with an assignment, lab, quiz, test, paper, etc., without authorization of the instructor of record or designee is prohibited. This includes but is not limited to asking for answers to a quiz, trading answers, or offering to pay another to complete an assignment. It is considered Academic Misconduct to solicit assistance with academic coursework and/or degree requirements, even if the solicitation did not yield actual assistance (for example, if there was no response to the solicitation).

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.

Honors students of course can 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 A grades, I recommend scheduling 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, *iClicker* polling, textbook readings, *MasteringBiology* homework, group worksheets, laboratory, reviewing) will contribute to your learning and to success in this course.

Course Accessibility and Inclusion: It is my goal that this class be an accessible and welcoming experience for all. UCF and I consider the diversity of our students, faculty, and staff to be a strength and critical to our educational mission. UCF expects every member of the university community to contribute to an inclusive and respectful culture for all in its classrooms, work environments, and at campus events. Dimensions of diversity can include sex, race, age, national origin, ethnicity, gender identity and expression, intellectual and physical ability, sexual orientation, income, faith and non-faith perspectives, socio-economic class, political ideology, education, primary language, family status, military experience, cognitive style, and communication style. The individual intersection of these experiences and characteristics must be valued in our community. If there are aspects of the design, instruction, or experiences within this course that result in barriers to your inclusion or accurate assessment of achievement, please notify me to discuss reasonable options or adjustments. You may also want to contact SAS at sas.sdea.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://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.

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 <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.

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.
 - 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 <https://ehs.ucf.edu/automated-external-defibrillator-aed-locations> (In BA1, building 45, they are located on the 2nd floor near elevator).
 - 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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Lecture Dates 2024**Weekly Lab Exercise**

Jan 08: *Course introduction & Chapt 1- Life*

No lab

Jan 10: Chapter 1 - *Life*Jan 12: Chapter 2 - *Chemical Context**DROP/ADD deadline Fri, Jan 12 @11:59 pm*Jan 15: **MLK Holiday**Lab 1. *Daphnia* Heart RateJan 17: Chapter 2/3 - *Water*

Jan 19: Chapter 3

Jan 22: Chapter 4 - *Carbon*

Lab 2. Solutions/Dilutions/Spectrophotometry

Jan 24: Chapter 5 - *Large Biomolecules*

Jan 26: Chapter 5

Jan 29: **Exam 1 (Chapters 1 – 5)**

Lab 3. Standard Curve Hemoglobin

Jan 31: Chapter 6 - *The Cell*

Feb 02: Chapters 6

Feb 05: Chapter 6/7 - *Membranes*

Lab 4. Cell Membranes

Feb 07: Chapter 7

Feb 09: Chapter 8 - *Metabolism*

Feb 12: Chapter 8

Lab 5. Electrophoresis I

Feb 14: Chapter 9 - *Cellular Respiration*

Feb 16: Chapter 9

Feb 19: Chapter 9/10 - *Photosynthesis*Lab 6. Electrophoresis II & **Lab Notebook check**

Feb 21: Chapter 10

Feb 23: **Exam 2 (Chapters 6 – 10)**Feb 26: Chapter 12 - *Cell Cycle & Mitosis*

Lab 7. Cell Cycle & Mitosis

Feb 28: Chapter 12

Mar 01: Chapter 13 - *Meiosis*

Mar 04: Chapter 13

Lab 8. Human Phenotypes

Mar 06: Chapter 14 - *Mendel and the Gene Idea*

Mar 08: Chapter 14

Mar 11: Chapter 14

Lab 9. *Drosophila* GeneticsMar 13: Chapter 15 - *Chromosomal Inheritance*

Mar 15: Chapter 15

Mar 18-24: **Spring Break**

Mar 25: Problems 14/15

Lab 10. *Drosophila* progenyMar 27: **Exam 3 (Chapters 12 - 15)**Mar 29: Chapter 16 - *Molecular Basis of Inheritance**WITHDRAW deadline Fri, Mar 29 @11:59 pm*

Apr 01: Chapter 16
Apr 03: Chapter 17 - *From Gene to Protein*
Apr 05: Chapter 17

Lab 11. DNA Replication

Apr 08: Problems 16/17
Apr 10: Chapter 19 – *Viruses*
Apr 12: Chapter 22 - *Descent with Modification*

Lab 12. Transcription/Translation models
& **Turn in Lab Notebook**

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

Lab Notebooks returned

Apr 22: Chapter 23
Apr 24: **Comprehensive Final Exam** (Wed, 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 and store in Lab Notebook binder for grading.

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

33 points - Laboratory notebook
33 points - Weekly Quizzes
34 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 in Webcourses.