

**University of South Carolina**  
**College of Arts and Sciences**  
**Department of Biological Sciences**

BIOLOGY 110 YJC (BIOL 110 – General Biology)

(4 credit hours; Online Delivery) Dates: December 27, 2021-January 16, 2022

(Winter Session 3WT)

Basic biological concepts and issues for non-biology majors. Credit may not be given for this course and BIOL 120.

**Carolina Core SCI**

**Instructor: Dr. Tom Reeves**

Email: [reevest@mailbox.sc.edu](mailto:reevest@mailbox.sc.edu)

***Note: Email is the preferred means of communication and will be checked periodically throughout the day Monday-Friday. I will try to respond within 24 hours to any question or request. I do not check email consistently on Saturdays or Sundays.***

**Required Text:** Essential Biology, Campbell, 7<sup>th</sup> edition; Simon, Dickey and Reece Softbound Copy (ISBN 13: 978-0-134-76503-7) Download the Pearson App to purchase the ebook version of the text or contact the bookstore or Pearson directly.

**Biology 110 Study Guides, Lab Activities, Unit Exams and Online Lab Quizzes:**

These materials will be posted on Assignments in Blackboard for the course. All readings and materials used in Biology 110 comply with copyright and fair use policies.

**General Course Description:** Biology 110 presents basic biological concepts and issues for non-biology major. This online version of the course also includes an online lab that will be presented as activities posted as four Modules in Blackboard.

Biology 110 consists of four units (presented as four Modules on Blackboard).

**Module 1 (Unit 1)** contains an introduction to the scientific method, properties of life, biochemistry, cell biology and an overview of the importance of cell processes mitosis, meiosis, photosynthesis and cellular respiration.

**Module 2 (Unit 2)** involves an introduction to genetics from the early work of Gregor Mendel to the modern role of genetics in biotechnology and genetic engineering. An emphasis is placed on human genetics.

**Module 3 (Unit 3)** contains an introduction to scientific views pertaining to the origin of life on Earth and the evolution of life on Earth over the past 4.6 billion years including the work of Charles Darwin and the theory of natural selection. In this module we will also begin a survey of life on Earth by looking at viruses, prions, and the simple organisms bacteria, Protista, and fungi.

**Module 4 (Unit 4)** continues a survey of the diversity of life on Earth with a look at plants and animals and the connections of these organisms to each other and to human history. Module 4 also includes an introduction to ecology and a survey of the Earth's major biomes and major ecological problems currently facing humanity and possible solutions and sustainability issues.

**Biology 110 will emphasize the applications and connections of these topics to everyday life.**

### **Pre-requisites**

There are no course pre-requisites.

### **Course Learning Outcomes**

Upon successful completion of Biology 110, students will be able to:

1. Distinguish scientific inquiry from other legitimate methods of inquiry and to recognize the difference between scientifically legitimate inquiry and claims without a sound scientific basis.
2. Critically evaluate the merits or failure of scientific hypotheses.
3. Identify and describe the characteristics of the chemistry of elements common to all life.
4. Describe the principle of cellular organization regulating critical cellular functions, including metabolism, gene expression, photosynthesis, and cellular respiration.
5. Describe cell division in mitosis and meiosis.
6. Describe the mechanism of DNA replication.
7. Assess the methods by which extensive genetic information is generated by the permutation of a simple genetic code and the manner in which this variation is translated and integrated to form the whole organism.
8. Discuss how the study of fundamental mechanisms such as gene replication and expression pioneered the development of modern DNA technologies and the practical applications of DNA technologies to human welfare.
9. Assess ethical issues that arise through the application of DNA technology.
10. Demonstrate recognition of the role of sound scientific information in policy and management issues.
11. Describe the roles of evolutionary processes in generating the diversity of life on Earth.
12. Apply statistical and quantitative approaches to analyze phenotypic ratios from different genetic experiments.
13. Evaluate the role of genetic variation in contributing to human health welfare.
14. Demonstrate the ability to infer the phenotypic composition of populations from its underlying genetic variation.
15. Evaluate the evidence of evolution by common descent by interpreting patterns of biogeographic, genetic, morphological, and biochemical relationships among organisms.
16. Distinguish the processes that control the assembly of species into communities and how the function of these communities contribute to human welfare.

17. Assess the long-term consequences of human activities in altering ecosystem composition and services on local, regional, and global scales.
18. Compare and contrast characteristics of organisms included in the Kingdoms Protista, Monera, Fungi, Plantae, and Animalia; and describe connections these organisms have to humans and human history.

**All learning outcomes in this Distributed Learning course are equivalent to face-to-face (F2F) versions of this course.**

### **Course Overview:**

The course is an online asynchronous course. There will be regular required deadlines for submission of work. Additionally, this course uses Blackboard learning management system ([Blackboard Link](#)) for all instruction, access to course materials, quizzes, tests, class discussions, and submission of assignments. The course consists of online lectures, lab activities, videos, interactive websites, essays, reading assignments, and worksheets. Students will work at different times from different locations and will not be required to attend any face-to-face (F2F) or synchronous meetings at the same time. All exams and quizzes will be presented online in Assignments on Blackboard and will have due dates and deadlines listed in this syllabus. All discussion board posts and emails will be responded to within 24 hours, Monday through Friday. Feedback will be provided on all assignments within 48 hours, Monday through Friday.

### **Minimum Technical Skills Required:**

Minimal technical skills are needed in this online course. All work in this course must be completed and submitted online. Therefore, students **MUST** have consistent and reliable access to a computer and the Internet. Before starting this course, students must feel comfortable doing the following. The minimal technical skills students should include the ability to:

- organize and save electronic files,
- use email and attached files,
- check email and Blackboard daily,
- download and upload documents,
- print various course documents, and
- take online quizzes and exams.

### **Technical Support**

Blackboard

[Blackboard Help \(http://ondemand.blackboard.com/students.htm\)](http://ondemand.blackboard.com/students.htm)

If you have problems with your computer, please contact University Technology Support (UTS) Help Desk at 803.777.1800 or [helpdesk@sc.edu](mailto:helpdesk@sc.edu). The UTS Help Desk is open Monday – Friday from 8:00 AM – 6:00 PM. The Thomas Cooper Library at USC has computers for you to use and if you are not in Columbia, most public libraries have computers you may use if you find yourself facing computer problems.

Blackboard Learn Accessibility Statement ([Blackboard Accessibility Statement Link](#))

**Major Assignments:** In lecture there will be Four Unit Exams given throughout the course that test you on the material covered in each of the four Course Modules. All four exams will be equally weighted in determining your final grade average. The Exams will consist of multiple choice and matching, objective questions. There will be 75 multiple choice questions on each lecture unit exam.

There will be nine (9) labs presented in the lab portion of the course, and you will have nine (9) scheduled lab quizzes that consist of 20 multiple choice questions that will test your knowledge of the lab material. The unit and the lab quizzes will be taken online. Generally, you will have two chances to take each lab quiz if necessary, with the higher score recorded.

**Grading:** Your Biology 110 final grade will be calculated by the total points earned. The unit exams are worth a total of 300 points (4X75 points each) and the labs are worth a total of 180 points (9X20 points each). There is also a Syllabus Quiz worth 20 points, for. This represents a total of 500 points that you may earn in Biology 110.

### **Biology 110 Total Points**

Your final grade will then be determined from the chart below. Each letter grade represents a 10% calculation A (90%), B (80%), C (70%), D (60%), F (<60%). You will then receive a single letter grade for the entire Biology 110 course. **The final point total will determine your final letter grade.** Once the final grade is calculated, there will be no “rounding up or off” of grades, no extra credit, and no curve.

### **Total Points**

Syllabus Quiz		20 Points
Module Unit Exams	(Four Unit Exams X 75 Points Each)	300 Points
Lab Quizzes	(Nine Lab Quizzes X 20 Points Each)	180 Points
Point Total		500 Points

**Grading Scale:** The grading scale will be as follows (out of 500 total points):

<u>Grade</u>	<u>Percent</u>	<u>Points Total</u>
A	90-100	450-500
B+	88-89	440-449
B	80-87	400-439
C+	78-79	390-399
C	70-77	350-389
D+	68-69	340-349
D	60-67	300-339
F	<60	299 points or less

**If you do not complete a particular lab quiz or a unit exam within the stated time period, then a grade of zero will be recorded. You may only fail to complete three of the assigned labs. When you fail to complete the fourth lab, a grade of “F” will be assigned for the course.**

### **Disability and Other Student Support Services**

Students with disabilities should contact the Office of Student Disability Services. The contact information is below:

1523 Greene Street

LeConte Room 112A

Columbia, SC 29208

Phone: 803-777-6142

Fax: 803-777-6741

Email: [sasds@mailbox.sc.edu](mailto:sasds@mailbox.sc.edu)

Web: [Office of Disability Services Link](#)

These services can provide assistance with accessibility and other issues to help those with disabilities be more successful in the course. Additionally, students with disabilities should review the information the Disabilities Services Web site and proactively communicate with me before or during the first week of class.

The following other academic support services and resources may help you be more successful in the course as well.

[Library Services \(http://www.sc.edu/study/libraries\\_and\\_collections\)](http://www.sc.edu/study/libraries_and_collections)

[Writing Center \(http://www.cas.sc.edu/write\)](http://www.cas.sc.edu/write)

[Student Technology Resources \(http://www.sc.edu/technology/techstudents.html\)](http://www.sc.edu/technology/techstudents.html)

### **Academic Integrity:**

University policy regarding academic responsibility (Student Affairs Policy STAF 6.25) states “It is the responsibility of every student at the University of South Carolina Columbia to adhere steadfastly to truthfulness and to avoid dishonesty, fraud, or deceit of any type in connection with any academic program. Any student who violates this rule or who knowingly assists another to violate this rule shall be subject to discipline.” Students who commit an act of academic dishonesty may receive a failing grade on the assignment or in the course. More information regarding this policy can be found in the

[Carolina Community: USC Student Handbook and Policy Guide \(http://www.sc.edu/policies/staf625.pdf\)](http://www.sc.edu/policies/staf625.pdf)

Students are encouraged to read the [Carolinian Creed \(http://www.sa.sc.edu/creed/\)](http://www.sa.sc.edu/creed/)

Students are expected to follow the University of South Carolina honor code and should expect that every instance of a suspected violation will be reported. Students found responsible for violations of the Code will be subject to academic penalties under the Code in addition to whatever disciplinary sanctions are applied.

**Cheating on a test or copying or using someone else’s work, including lab quizzes and reports, will result in a 0 for the work, possibly an F in the course, and, in accordance with University policy, be referred to the University Committee for Academic Responsibility and may result in expulsion from the University.**

### **Class Conduct:**

Professionalism will be expected at all times, but most especially with your interactions online. Topics in the biological sciences, including those presented in Biology 110, are often controversial. Because the university classroom is a place designed for the free exchange of ideas, we must show respect for one another in all circumstances. We will show respect for one another by exhibiting patience and courtesy in our exchanges. Appropriate language and restraint from verbal attacks upon those whose perspectives differ from your own is a minimum requirement.

## **Tips for Being Successful in Biology 110:**

It is estimated that you will need to spend at least 3-4 hours every day to complete course work and to work toward being successful in this online course during the Winter 2019 semester that consists of only 19 days. If you do not take this time, or just do not have this time each day, you may feel overwhelmed and frustrated and your opportunity for success will be jeopardized. Generally, the more time you spend on the Core information presented in the Study Guide for each Module, and the Outlines and worksheets for each lab, the better you will do on the unit exams and lab quizzes.

### **Successful online learners**

1. do not procrastinate;
2. are open to sharing professional experiences online;
3. enhance online discussions;
4. have good written communication skills;
5. use proactive communication;
6. are self-motivated and self-disciplined;
7. have a commitment to learning;
8. have critical thinking and decision-making skills;
9. believe quality learning can take place in an online environment; and
10. have good time management skills.

**Table 1: Biology 110 YJC Online Course Schedule  
Winter Session (December 27, 2021-January 16, 2022)**

<b>Week</b>	<b>Module</b>	<b>Topics</b>	<b>Text References</b>
December 27, 2021- January 3, 2021 (7 Days)	Module 1A	Scientific Method, General Chemistry	Chapters 1, 2, 3, and 4
	Module 1B	Organic Chemistry, Molecules of Life, Cell Biology	Chapters 5, 6, Notes
January 4-January 8 (5 Days)	Module 2A	Mendelian Genetics	Chapter 9
	Module 2B	Human Genetics, DNA and Protein Synthesis	Chapter 10, 11, and 12
January 9-January 12 (4 Days)	Module 3A	Origin of Life, Darwin and Natural Selection	Chapter 13, 14, 15,
	Module 3B	Diversity of Life, Simple Organisms, Viruses, Bacteria, Fungi	Chapter 15
January 13-January 16 (5 Days)	Module 4A	Diversity of Life, Plants and Animals	Chapters 16 and 17
	Module 4B	Ecology	Chapters 18, 19, and 20

## Biology 110 YJC Online

Table 2: Unit Exams, Lab Quizzes, Syllabus Quiz Due Dates and Deadlines  
Winter Session 2020-2021 (December 27, 2021-January 16, 2022)

<b>Week</b>	<b>Module</b>	<b>Unit Exam and Lab Quizzes</b>	<b>Due Dates and Times</b>
December 27, 2021- January 3, 2022	Module 1A	<b>Syllabus Quiz</b>  <b>Lab Quiz 1 Scientific Method</b>	December 27, 2021 Monday 6:00 PM ET  December 29, 2021 Wednesday 6:00 PM ET
	Module 1B	<b>Lab Quiz 2 Chemistry</b>  <b>Lab Quiz 3 Cell Biology</b>  <b>Module 1 Unit Exam</b>	January 1, 2022 Saturday 6:00 PM ET  January 2, 2022 Sunday 6:00 PM ET  January 3, 2022 Monday 6:00 PM ET
January 4-January 8, 2022	Module 2A	<b>Lab Quiz 4 Mendelian Genetics</b>	January 5, 2022 Wednesday 6:00 PM ET
	Module 2B	<b>Lab Quiz 5 Human Genetics</b>  <b>Module 2 Unit Exam</b>	January 7, 2022 Friday 6:00 PM ET  January 8, 2022 Saturday 6:00 PM ET
January 9-January 12, 2022	Module 3A	<b>Lab Quiz 6 Origin of Life and Natural Selection</b>	January 9, 2022 Sunday 6:00 PM ET
	Module 3B	<b>Lab Quiz 7 Microscope and Microbes</b>  <b>Module 3 Unit Exam</b>	January 11, 2022 Tuesday 6:00 PM ET  January 12, 2022 Wednesday 6:00 PM ET
January 13-January 16, 2022	Module 4A	<b>Lab Quiz 8 Plants and Animals</b>	January 14, 2022 Friday 6:00 PM ET
	Module 4B	<b>Lab Quiz 9 Animal Behavior</b>  <b>Module 4 Unit Exam</b>	January 15, 2022 Saturday 6:00 PM ET  January 16, 2022 Sunday 6:00 PM ET

## **Procedures for Taking Online Exams and Lab Quizzes (Read Carefully)**

You will have two attempts to take each Lab Quiz but only one attempt at each of the four Module Exams. The higher grade on the lab quiz attempts will be recorded. You must follow all instructions as you take the Lab Quizzes and Module Exams. You may use notes, but you must not leave the quiz for any reason. During a quiz or exam if you try to do a web search, access another file, send an email, copy the screen or any other activity on your computer, the screen will lock and you will not be allowed to continue. Beyond that, it is your responsibility to use a dependable computer with a dependable internet connection.

**The instructor will not reset quizzes or exams. You must follow directions.**

### **Additional Biology Online Lab Information**

1. **DESCRIPTION:** The Biology 110 labs will be offered online. You will find the lab activities posted in the four course Modules.
2. **You must complete each lab quiz within the stated dates.** You will have two opportunities to take each lab quiz. The quizzes are created from a pool of questions developed for each unit and are randomly generated. The answers to each question are also randomized so no two lab quizzes will be exactly the same. The second time you take a particular lab quiz you will see different questions and a different order of questions. **If you take the lab quiz twice then the higher score will be recorded.**
3. **ACTIVITIES INCLUDED IN BIOLOGY 110 LAB:** The lab activities will include interactive websites, virtual lab experiments, simulations, short videos, biographical and historical information, problem sets, biology games, and much more.
4. **BIOL 110 LAB SCHEDULE:** The instructor will provide you with a calendar that lists the specific due dates in the **course syllabus**.
5. **BIOL 110 LAB MATERIALS:** You will not need to purchase a lab manual for Biology 110. All units, activities, and worksheets will either be posted in the four course Modules on Blackboard or available at the various websites included in the course.

### **6. Online Quizzes: Information and Procedures**

1. Each Online Quiz will generally consist of 20 multiple choice questions.
2. You will have two opportunities to take each online quiz. The higher score will be recorded on Blackboard.

3. You may use notes as you take the online quiz, but once you have begun each quiz do not leave Blackboard or go to any other site on your laptop or computer for any reason. Do not have any other site open as you take the quiz. Do not answer or send emails or listen to music while you take your quiz or the program may well “block you from continuing” the quiz or not record your grade at the end correctly.

4. **The instructor will not “reset” your quiz for any reason.** You have two opportunities to get one right. Tablets, especially Apple tablets, sometimes do not work well in terms of taking quizzes on Blackboard. There are computers available in the library if you need them or if your laptop or tablet has ever had difficulty with any online quiz offered through Blackboard. To take the quizzes and module exams you will need to use a reliable computer and internet system. It is suggested that you use a computer that is hardwired to the internet and not a wifi system that you are unfamiliar with.

5. Do not attempt to save a copy of the screen, backtrack, or any other unauthorized procedure during the quiz, or your quiz may not be scored properly or at all. **Once again, I will not reset the quiz or module exam for any reason.**

6. You will need to begin taking each Online Quiz at least 30 minutes before the deadline if you wish to have time to finish and allow the program to grade your quiz properly. Generally you are given 20 minutes to complete each Online Quiz. In order to have time to take your Online Quiz twice, you will need to begin at least 60 minutes prior to the deadline.

**If there are any problems, do not hesitate to contact me.**

**CHANGES: Although every attempt will be made to adhere to the schedule and procedures presented in this syllabus, the instructor reserves the right to make changes in the course as deemed necessary**