

BIOL 1030-003: General Biology I

Fall 2022

Class meetings: Monday, Wednesday, Friday from 10:10 – 11:00 am, Bracket Hall Room #100

INSTRUCTOR INFORMATION

Name: Dr. Allison Mann

Office: Long Hall 111

Email: amann3@clemson.edu (best way to reach me)

Office hours: Monday & Friday 12:30 – 2:30 pm or by appointment

COURSE DESCRIPTION

This course is the first in a two-semester sequence. Course materials include an evolutionary approach to cells, cellular activities, genetics, and animal diversity emphasizing the process of science. Credit towards a degree will be given for BIOL 1030 or BIOL 1100 only.

LEARNING OUTCOMES

In this course you will develop an understanding of the scope and principles of general biology and how these concepts interconnect with each other. The course is split into four units: the first unit investigates the common principles of chemistry as it affects biology at the molecular level and higher including cellular anatomy and organization. The second unit concentrates on cellular function and physiology with the main focus on energy flow in biological systems (metabolism!). The third unit centers on the molecular structure and function of DNA and the basic principles of genetics and inheritance. The final unit explores the basic principles of evolution (pattern and process) followed by the beginning of a survey of organismal diversity examining animal diversity.

REQUIRED SOFTWARE

- Respondus Lockdown
- Canvas
- For technical assistance with the course site, students should contact ithelp@clemson.edu or visit CCIT's website (<https://ccit.clemson.edu/>)

REQUIRED TEXT AND RESOURCES

- Textbook: Taylor, Simon, Dickey, Reece: *Campbell Biology: Concepts & Connections* (10th Ed.), 2019, Pearson Education. eText is fine!
- Online quizzes and homework: Mastering Biology to accompany Campbell Biology through Canvas. Follow the MyLab and Mastering link on the left side of Canvas to access.
- Additional course materials will be available on Canvas (e.g., lecture slides, study guides, announcements, etc).
- Exams: You will need a laptop with LockDown Browser installed for testing. This course requires LockDown Browser for exams even though they are completed

in the classroom. Once installed start LockDown Browser > Log into Canvas > Navigate to the test

[Download and installation instructions for LockDown Browser](#)

[Watch this video to get a basic understanding of LockDown Browser](#)

TOPICAL OUTLINE AND TENTATIVE SCHEDULE

DATE	LECTURE TOPIC	READINGS
Unit I: The life of the cell		
24-Aug	Introduction to the course	Syllabus, Preface & 1.1
26-Aug	Main themes: Life's organization and the scientific method	1.2-1.3, 1.9-1.14, 15.19
29-Aug	Chemical bonds & energy: Water and pH	2.1-2.16
31-Aug	Organic macromolecules: Carbohydrates and lipids	3.1-3.11
2-Sep	Organic macromolecules: Proteins and nucleic acids	3.12-3.16
5-Sep	Cells: Prokaryotes vs. Eukaryotes	4.1-4.6, 15.17, 16.8
7-Sep	Anatomy of a cell	4.7-4.22
9-Sep	Review	
12-Sep	Exam I	
Unit II: Cellular processes		
14-Sep	Cell membrane structure & transport	5.1-5.3
16-Sep	Energy	5.4-5.10
19-Sep	Enzymes & Cellular Respiration	5.11-5.16
21-Sep	Cellular respiration: Glycolysis & the citric acid cycle	6.1-6.5
23-Sep	Cellular respiration: Electron transport chain	6.6-6.8
26-Sep	Fermentation & photosynthesis	6.10-6.15
28-Sep	Photosynthesis: Capturing light to power sugar synthesis	7.1-7.8
30-Sep	Photosynthesis: The Calvin Cycle	7.9-7.14
3-Oct	Review	
5-Oct	Exam II	
Unit III: Genetic exchange & gene expression		
7-Oct	Cell reproduction & cell life cycle	8.1-8.10
10-Oct	Meiosis	8.11-8.14
12-Oct	Chromosomes, individual variability & mutations	8.15-8.23
14-Oct	Mendelian inheritance: From parent to offspring	9.1-9.4, 9.7
17-Oct	Mendelian inheritance: Multiple & sex-linked traits	9.5-9.6, 9.20-9.23
19-Oct	Inheritance beyond Mendel	9.8-9.19
21-Oct	DNA structure & DNA replication	10.1-10.5
24-Oct	* NO CLASS: TAKE HOME ASSIGNMENT	

26-Oct	* NO CLASS: TAKE HOME ASSIGNMENT	
28-Oct	* NO CLASS: TAKE HOME ASSIGNMENT	
31-Oct	Transcription & Translation	10.6-10.9
2-Nov	RNA modification, translation & mutations	10.10-10.16
4-Nov	Regulation of Eukaryotic genes	11.4-11.11
7-Nov	* FALL BREAK	
9-Nov	Applied gene regulation: Gene editing & genomics	12.1-12.21
11-Nov	Review	
14-Nov	Exam III	
Unit IV: Understanding biodiversity		
16-Nov	Basics of evolution	13.1-13.7
18-Nov	Population genetics & the mechanisms of microevolution	13.8-13.11
21-Nov	Species & speciation	13.12-13.18
23-Nov	* THANKSGIVING HOLIDAY	
25-Nov	* THANKSGIVING HOLIDAY	
30-Nov	Major events in the history of life	14.1-14.11
2-Dec	The geologic record, macroevolution, & phylogenetic trees	15.1-15.13
5-Dec	Invertebrate animal diversity	16, 17
7-Dec	Vertebrate animal diversity	18
9-Dec	Review	19.1-19.4, 19.8-19.17
TBD	Exam IV	

Please note, I might not go over some of the assigned reading material during lecture but it is still 'fair game' for exams. **I reserve the right to change this syllabus and schedule as necessary during the semester.**

COURSE POLICIES

Grading scale:

A	90-100%
B	80-89%
C	70-79%
D	60-69%
F	59% and below

Grading: Your final class grade is based on four REQUIRED exams (90%) and weekly quizzes (10%). Your exams and quizzes are multiple choice.

Exams: Three of the exams will be given during normal lecture periods while the fourth will be given as scheduled during the week of final examinations (December 12th-16th). The final exam is NOT cumulative. Exams are held at our posted class times and the posted final time. Should you miss an exam, you must notify me IMMEDIATELY and

BEFORE the exam starts. You will be asked to provide proof of acceptable excuse as per Clemson's guidelines (e.g., doctor's note, obituary, pre-arrangement, etc). **There are NO make-up exams in this class unless pre-arranged or with a verifiable excuse.** Please be aware that make-up exams may be in a different format than those taken in class (e.g., essay questions).

Quizzes: You will have quizzes posted on Canvas due weekly, Sunday at 11:59pm. Each assignment will test on material covered in each week (lectures and readings). These assignments are designed to help you prepare for exams and as such you can retake any assignment once and only the highest grade will be recorded. It is your responsibility to make sure that all assignments are completed before the due date. There will be no extensions and missed assignments will get a grade of zero. I will not necessarily remind you of assignments, so be sure to check Canvas!

Extra credit: Extra credit *may* be available on all exams in the form of extra questions. Neither I, nor any other biology professor, will give individual students special extra credit assignments that are not also available to other students because that student's exam grades are not what the student 'needs'. **Do not ask.** Your grade is based on the mastery of the course material (performance on the exams), focus on that mastery by studying daily.

All material you are responsible for will be denoted in materials provide for class via Canvas or Mastering Biology. You may be responsible for sections of the text or readings we do not go over in class; I will specifically tell you if this is the case. I will provide study guides poster on Canvas. They are there to help you prepare for tests. It is your responsibility to use them and annotate them.

Attendance: Attendance is not strictly manadatory (does not count to your grade) in BIOL 1030. Attendance is, however, *essential* to your understanding of the material presented in the course and the success of your grade. You should speak with me as soon as possible regarding any absence and develop a plan for any make-up work. It is your responsibility to let me know if you need to make any changes due to the pandemic. You may find it helpful to use the Notification of Absence module in Canvas. If you have difficulty or are unable to electronically report the absence, you may call the Office of Advocacy and Success at 864-656-0935 for assistance and guidance.

You are expected to arrive on time for lecture and remain until class is dismissed. Coming to class late minimizes the benefits of the course to you and is inconsiderate to me and your fellow students. I ask that all cell phones be put aside. Any non-academic activity in the form of chatting, sleeping, playing computer games/movies/etc. will be warned and may result in you being asked to leave.

Should I be late to lecture, you must wait 10 minutes before leaving. I will try to inform you if I can't make it to class ahead of time via email and Canvas announcement.
Inclement weather: Any exam that was schedules at the time of a class cancellation due to inclement weather, University power outage, etc. will be given at the next class

meeting unless contacted by the instructor. Any assignments due at the time of a class cancellation due to inclement weather will be due at the next class meeting unless the instructor contacts students. Any extension or postponement of assignments or exams must be granted by the instructor via email or Canvas within 24 hours of the weather-related cancellation.

Academic continuity: Clemson has developed an Academic Continuity Plan for academic operations should university administration officially determine that the physical classroom facility is not available to conduct classes. In these cases, class will be conducted in a virtual (online) form. The university issues official disruption notifications through email, website, text notification, and social media. When notified, use one of the following links to navigate to Clemson Canvas where you will find important information about how we will conduct class:

- Primary access link: <http://www.clemson.edu/canvas>
- Secondary access link: <https://clemson.instructure.com>

OTHER EXPECTATIONS

COVID 19: To maintain an inclusive and safe environment so that all members of this course may success, it is also expected that those in attendance follow health guidelines for everyone's safety. Should a student feel ill or have received a positive COVID test, that student should not attend class. Instead, notify me that you are ill via the Notification of Absence module in Canvas or email. Students should follow up with me to develop a continued plan of study if their illness impacts their ability to participate in regular course work. Please be familiar with the information on the Healthy Clemson website (<https://www.clemson.edu/campus-life/healthy-campus/>).

Should I have to quarantine, I will conduct lectures virtually via Zoom. I will inform any such changes via Canvas announcements. As we learn more about the state of the pandemic and the current level of risk, policies to mitigate the spread of disease in our classroom may change throughout the semester. I will inform you of these changes ahead of time so that you can prepare accordingly.

Conduct: Please use appropriate conduct to help maintain a safe learning environment. Participants should:

- Never transmit or promote content known to be illegal.
- Respect people's privacy as well as your own.
- Forgive other people's mistakes.
- Never use harassing, threatening, embarrassing, or abusive language or actions.

UNIVERSITY POLICIES

Accessibility Services: Clemson University values the diversity of our student body as a strength and a critical component of our dynamic community. Students with disabilities or temporary injuries/conditions may require accommodations due to barriers in the

structure of facilities, course design, technology used for curricular purposes, or other campus resources. Students who experience a barrier to full access to this class should let the instructor know and make an appointment to meet with a staff member in Student Accessibility Services as soon as possible. You can make an appointment by calling 864-656-6848, by emailing studentaccess@lists.clemson.edu, or by visiting Suite 239 in the Academic Success Center building. Appointments are strongly encouraged – drop-ins will be seen, if at all possible, but there could be a significant wait due to scheduled appointments. Students who have accommodations are strongly encouraged to request, obtain and send these to their instructors through their AIM portal as early in the semester as possible so that accommodations can be made in a timely manner. It is the student's responsibility to follow this process each semester.

Non-Discrimination: The Clemson University Title IX statement: Clemson University is committed to a policy of equal opportunity for all persons and does not discriminate on the basis of race, color, religion, sex, sexual orientation, gender, pregnancy, national origin, age, disability, veteran's status, genetic information or protected activity in employment, educational programs and activities, admissions and financial aid. This includes a prohibition against sexual harassment and sexual violence as mandated by Title IX of the Education Amendments of 1972. This Title IX policy is located on the Campus Life website. Ms. Alesia Smith is the Clemson University Title IX Coordinator, and the Executive Director of Equity Compliance. Her office is located at 2237 Brackett Hall, 864.656.0620. Remember, email is not a fully secured method of communication and should not be used to discuss Title IX issues.

Academic Integrity: As members of the Clemson University community, we have inherited Thomas Green Clemson's vision of this institution as a "high seminary of learning." Fundamental to this vision is a mutual commitment to truthfulness, honor, and responsibility, without which we cannot earn the trust and respect of others. Furthermore, we recognize that academic dishonesty detracts from the value of a Clemson degree. Therefore, we shall not tolerate lying, cheating, or stealing in any form. All infractions of academic dishonesty by undergraduates must be reported to Undergraduate Studies for resolution through that office. In cases of plagiarism instructors may use the Plagiarism Resolution Form.

Copyright Statement: Materials in some of the courses are copyrighted. They are intended for use only by students registered and enrolled in a particular course and only for instructional activities associated with and for the duration of the course.

Student Safety: Clemson University is committed to providing a safe campus environment for students, faculty, staff, and visitors. As members of the community, we encourage you to take the following actions to be better prepared in case of an emergency:

- Ensure you are signed up for emergency alerts (<https://www.getrave.com/login/clemson>),

- Download the Rave Guardian app to your phone (<https://www.clemson.edu/cusafety/cupd/rave-guardian/>)
- Learn what you can do to prepare yourself in the event of an active threat (<http://www.clemson.edu/cusafety/EmergencyManagement/>)

Helpful Resources: The Department of Biological Sciences is committed to providing a supportive learning environment for all students. If you are facing tough times, please utilize these resources. You may also reach out to me directly.

- Financial Assistance: Clemson Student Financial Aid (<http://www.clemson.edu/financial-aid/index.html>), and Anderson Interfaith Ministries (<https://www.aimcharity.org/>)
- Food Insecurity: Clemson Paw Pantry (<http://facebook.com/CUpawpantry>)
- Textbook Assistance: Clemson Library FAQs (<https://clemson.libanswers.com/faq/100017>) and Clemson Bookstore Open Education Resources copies (<https://clemson.bncollege.com/shop/clemson/page/find- oer>)
- General Resources: (<https://www.clemson.edu/studentaffairs/advocacy-success/resources/index.html>)
- Multicultural Resources and Support: Gantt Multicultural Center (<https://www.clemson.edu/centers-institutes/gantt/multicultural-programs>)
- LGBTQ Support: Gantt Multicultural Center –LGBTQ Programs (<https://www.clemson.edu/centers-institutes/gantt/lgbtq-programs/resources.html>)
- Adjustment and Transition: Counseling and Psychological Services (<https://www.clemson.edu/campus-life/student-health/caps>) and Student Transitions and Family Programs (<http://www.clemson.edu/studentaffairs/stfp/index.html>)
- Interpersonal Violence: Healthy Campus (<https://www.clemson.edu/campus-life/healthy-campus/interpersonal-violence/index.html>)
- Addiction and Recovery: SC: (<https://www.daodas.sc.gov/>), Web: (<https://addictionresource.com/>) and Vaping (<https://vapingdaily.com/health/>).