Principles of Biology I

Last Updated: Mon, 01/05/2026

Course prefix: BIOS

Course number: 1107

Section: A

CRN (you may add up to five):
33389

Instructor First Name: Colin

Instructor Last Name: Harrison

Semester: Spring

Academic year: 2026

Course description:

In this **active-learning** course, you will explore the basic principles of modern biology, including biomacromolecules, bioenergetics, cell structure, genetics, evolution, and ecological relationships. You will also develop scientific skills in analyzing and interpreting scientific data to test hypothesis and communicate scientifically. Finally, you will develop and practice skills in metacognition to identify your best learning strategies that you will be able to employ in your future courses and career.

Course learning outcomes:

1. Explain biological principles of modern biology, including biomacromolecules, bioenergetics, cell structure, genetics, evolution, and ecological relationships (Course lecture content).
2. Use scientific skills to test hypotheses, design experiments, analyze and interpret data, and communicate scientifically (Course lecture content)
3. Communicate effectively using appropriate scientific language (Course lecture content and Scientist Spotlights)
4. Appreciate commonalities and differences among people who practice science, and recognize that there are multiple pathways into science as a career (Scientist Spotlights)
5. Reflect on the usefulness of your study strategies and identify new strategies and practices to achieve your best learning strategies (Metacognition Module and Exam wrappers)

Required course materials:

This course is taught using the flipped classroom model, meaning that you will need to complete the assigned readings before each lecture. This course is taught without a commercial textbook, and all course readings and videos are on the course online textbook at https://bioprinciples.biosci.gatech.edu/. The course schedule below contains links to each required reading and videos. Required pre-class, in-class, and homework activities will be conducted through Learning Catalytics (learningcatalytics.com). *A code will be sent to your GT email to access Learning Catalytics; you do NOT need to purchase access yourself.*

Grading policy:

Grading: Your final grade will depend on the following combination of grades:

Midterm exams (approximately 10% each, see #1 below) 40%

Final exam (cumulative) 20%

Writing Assignments (10 total, equally weighted, 2.5% each) 25%

Participation (each assignment equally weighted among HWs, IKEs, and TICAs*) 20%

*Each IKE, TICA, and HW is worth 1 point; the total score you earn is divided by the total number of assignments offered (dropping the lowest 14 scores)

Note that these components add up to 105%, and scores will be calculated out of 100% (not normalized over 105%), meaning that there is 5% extra credit built into the course components. We will use the following procedure in calculating your final grade:

1. We will weight your 4 midterms 6%, 10%, 10%, and 14%, where your lowest midterm score will count 6% and your highest midterm score will count 14% of your final grade.
2. We will combine your exam, writing assignments, and other scores into a score (0 – 100%) using the weights shown above.
3. We will assign final letter grades using the following scale:

A: ≥ 90.0%

B: ≥ 80.0% and < 90.0%

C: ≥ 70.0% and < 80.0%

D: ≥ 60.0% and < 70.0%

F: < 60.0

Attendance policy:

Absences: Regular attendance and active participation during class time are correlated with better performance in the course. If you miss class, you should get notes from a peer

and meet with a TA to get your content questions answered. If you experience any situation that causes you to miss more than one consecutive class or otherwise interferes with your ability to keep up with course assignments, we ask that you request assistance from the Dean of Students using this link: https://studentlife.gatech.edu/request-assistance. Select “Class Absence Verification” for documentation of an absence, including missed exams. Select “Meeting with a Dean” for any other issue that is interfering with your ability to succeed in this or any other course. Missed exams fall under the **Missed Exams** policy. Missed participation sessions due to absences for any reason fall under the **Missed Assignments policy**.

Academic honesty/integrity statement:

Students are expected to maintain the highest standards of academic integrity. All work submitted must be original and properly cited. Plagiarism, cheating, or any form of academic dishonesty will result in immediate consequences as outlined in the university's academic integrity policy.

Core IMPACTS statement(s) (if applicable):

This is a Core IMPACTS course that is part of the STEM area.

Core IMPACTS refers to the core curriculum, which provides students with essential knowledge in foundational academic areas. This course will help students master course content, and support students’ broad academic and career goals.

This course should direct students toward a broad Orienting Question:

- How do I ask scientific questions or use data, mathematics, or technology to understand the universe?

Completion of this course should enable students to meet the following Learning Outcome:

- Students will use the scientific method and laboratory procedures or mathematical and computational methods to analyze data, solve problems, and explain natural phenomena.

Course content, activities and exercises in this course should help students develop the following Career-Ready Competencies:

- Inquiry and Analysis
- Problem-Solving
- Teamwork