# Skills for Introductory Biology (BIOL 188)

Fall 2019
1 credit
Wednesdays 10:30-1:30
ISC 101 (KM)
ISC 103 (SY)

## Instructors

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## Course Description (from the undergraduate bulletin)

An introductory experience which develops laboratory and analytical skills related to challenging topics in BIOL 117, Cells, Genetics, and Evolution. The laboratory also includes a research project. Prerequisites/corequisites: none. Registration is by permission of department. Credits 1(0-3).

## Intended Learning Outcomes

A successful student in this course will:

1. Have practiced fundamental science skills, such as solving problems, designing experiments, analyzing data, working in teams, and communicating about science.
2. Have a general understanding of the core concepts in biology needed for BIOL 117: evolution; structure and function; information storage and flow, exchange, transformations of energy and matter; and systems.
3. Understand what metacognition is, and use metacognition to reflect on learning in this class.
4. Have participated in a course-based undergraduate research experience (CURE).

## Required Materials

1. A laptop computer that can run Microsoft Office (SUNY Geneseo has a license).

2. There is not a required textbook for the course. Resources will be posted on Canvas, SUNY Geneseo's online course management system. You can access Canvas through My Geneseo.

## Grading

| Item | Points | Total |
|---|---|---|
| Pre-labs | 10 points x 13 | 130 points |
| Quizzes | 10 points x 13 | 130 points |
| Group end-of-lab questions | 20 points x 14 | 280 points |
| Unit analysis | 12 points x 5 | 60 points |
| | *Grand Total* | 600 points |

**Pre-labs** – Each week, all students need to be ready to contribute to the work during lab time. We have designed specific assignments to help you prepare. These pre-labs should be completed individually, and be finished before you come to lab each week. Feedback may be given for late pre-labs, but *no points can be earned for a late pre-lab.*
**Quizzes** – Each week, lab will begin with a quiz to test your understanding of the previous week's lab and the current week's lab. *Note that students are not permitted to enter/leave the classroom while the beginning-of-lab quiz is being taken – late students will receive a grade of zero for that day's quiz.*
**Group end-of-lab assignments** – Learning to work efficiently and effectively as a team is a critical scientific skill. At the end of most lab sessions, lab groups will complete a set of questions to wrap up the day's work. In the last lab session, groups will construct and deliver an oral presentation of their results of the Evolution research project (see schedule).
**Unit analysis** – Understanding how we learn and applying that knowledge to regulate our own learning is not only a critical scientific skill, but also a key to success in lifelong learning. At the beginning of the semester and after each major unit, you will complete a set of questions to review what you have learned and relate your newly-acquired knowledge to topics from other units, and synthesize both within and across units. These are submitted online through Canvas.

This grading scale will be used to assign final grades based on percentage of total points earned.

| | | | |
|---|---|---|---|
| A > 94 | 64.9 > E | 83.9 > B- > 80 | 69.9 > D > 65 |
| 87.9 > B > 84 | 93.9 > A- > 90 | 79.9 > C+ > 77 | |
| 76.9 > C > 74 | 89.9 > B+ > 87 | 73.9 > C- > 70 | |

## Absence Policy

Educational researchers conclude that class attendance is highly tied to success in a course. Attendance is especially critical in our course because it is logistically difficult to replicate what

students miss when they are absent from lab. **The limit for excused absences (illness, emergency) is two.** Students must email their professors within 24 hours of the absence for the absence to be considered excused. Three or more absences equates to missing over 20% of the course material, and any student with three or more absences will be assigned a grade of "E."

## Code of Professional Conduct in the Classroom

In our classroom, we are preparing you for not only other courses in the biology program, but also for your professional career. To achieve this goal, a respectful and professional environment is essential. Students, teaching assistants, and professors are expected to treat each other with respect. Our communal responsibilities are:

- **Preparation.** All members of our community – students, teaching assistants, and professors – must come to lab engaged and prepared for the day's work. This includes completing all assignments on time (students) and returning graded assignments promptly (professors and teaching assistants).
- **Timeliness.** Everyone should arrive a few minutes before class begins at 10:30 AM. This allows the professors to start lab on time, and students to begin the weekly quiz on time. Professors will not cause students to be late for their next class, while students will work efficiently and carefully during the lab so that all work can be completed by 1:20 PM.
- **Commitment.** Everyone will dedicate the entire lab period (10:30 AM to 1:20 PM) to being present and engaged in lab work. Permission may be granted for occasional breaks if the lab work can be paused. As this is not guaranteed, please take care of any personal matters before or after lab.
- **Focusing and minimizing distractions to others.** Everyone should promote an effective learning environment by staying on task and helping others to stay on task. Cell phones should be turned "off" or "silent" and stored in book bags/backpacks. Laptops should be used for class-related work only.
- **Communication.** Everyone is expected to check their email at least twice a day, and use email or Canvas to communicate with each other. Please make sure to set Canvas notifications to send you emails with updates. Students are also able to meet with professors and teaching assistants in office hours or by appointment.

## Academic Honesty and Plagiarism

All students are expected to follow the specific rules of academic honesty and plagiarism for SUNY Geneseo. Please refer to the current Undergraduate Bulletin for more details.

## Lab Safety

As for all work in a laboratory, safety is important in this course. Basic lab safety will be explained on the first day of class, and additional instruction as needed. For some lab activities, a lab coat is recommended and will be provided for you.

## Accommodations

SUNY Geneseo will make reasonable accommodations for persons with documented physical, emotional, or cognitive disabilities. Accommodations will be made for medical conditions related to pregnancy or parenting. Requests for accommodations including letters or review of existing accommodations should be directed to the Office of Disability Services in Erwin Hall 22 or disabilityservices@geneseo.edu or 585-245-5112. Students with letters of accommodations should submit a letter to each faculty member at the beginning of the semester and discuss specific arrangements. Additional information on the Office of Disability Services is available at www.geneseo.edu/dean_office/disability_services.

## Copyright Protection



## Schedule

| **Date** | **Topic** | **Notes*** |
|---|---|---|
| 28 Aug | Introduction to the course | G (due at end of lab)<br>U (due next lab) |
| 4 Sep | Photosynthesis and cellular respiration 1 | P (due beginning of lab)<br>Q (first part of lab period)<br>G (due at end of lab) |
| 11 Sep | Photosynthesis and cellular respiration 2 | P (due beginning of lab)<br>Q (first part of lab period)<br>G (due at end of lab)<br>U (due next lab) |
| 18 Sep | Genetics 1 | P (due beginning of lab)<br>Q (first part of lab period)<br>G (due at end of lab) |
| 25 Sep | Genetics 2 | P (due beginning of lab)<br>Q (first part of lab period)<br>G (due at end of lab) |
| 2 Oct | Genetics 3 | P (due beginning of lab)<br>Q (first part of lab period)<br>G (due at end of lab) |
| 9 Oct | Genetics 4 | P (due beginning of lab)<br>Q (first part of lab period)<br>G (due at end of lab)<br>U (due next lab) |

| | | |
|---|---|---|
| 16 Oct | GMO 1 | P (due beginning of lab)<br>Q (first part of lab period)<br>G (due at end of lab) |
| 23 Oct | GMO 2 | P (due beginning of lab)<br>Q (first part of lab period)<br>G (due at end of lab) |
| 30 Oct | GMO 3 | P (due beginning of lab)<br>Q (first part of lab period)<br>G (due at end of lab)<br>U (due next lab) |
| 6 Nov | Evolution research project 1 | P (due beginning of lab)<br>Q (first part of lab period)<br>G (due at end of lab) |
| 13 Nov | Evolution research project 2 | P (due beginning of lab)<br>Q (first part of lab period)<br>G (due at end of lab) |
| 20 Nov | Evolution research project 3 | P (due beginning of lab)<br>Q (first part of lab period)<br>G (due at end of lab) |
| 27 Nov | Thanksgiving Break | No class |
| 4 Dec | Evolution research project 4 | P (due beginning of lab)<br>Q (first part of lab period)<br>G (due at end of lab)<br>U (due 11 Dec) |

*__P__: Pre-lab assignments, __Q__: quiz, __G__: Group assignments, __U__: Unit analysis