


**BIO 201: General Biology I  
College of Arts & Sciences Syllabus**

**COURSE OVERVIEW**

This semester you will learn to think about life and living things like biologists do. You will discover new words, new concepts, and new skills, all of which will enable you to start asking and answering interesting questions about how life works. This course will be relevant to students planning careers in healthcare, education, scientific research, or environmental work.

**Our class meets Mondays and Wednesdays, 2:20 – 5:10 pm in classroom BBH – 316.**

**FACULTY INFORMATION**

<p><b>Instructor:</b> <b>Dr. Elyse Bolterstein</b></p>  <p>(Pronouns: she/her/hers)</p>	<p><b>E-mail:</b> <a href="mailto:e-bolterstein@neiu.edu">e-bolterstein@neiu.edu</a></p> <p>E-mail is the fastest and easiest way to contact me. I will try to respond within 24 hours. On weekends or holidays, I will respond by the next business day.</p> <p>Please use your university email for all communication for the course.</p> <p>Phone: 773-442-5742 Please e-mail me instead of leaving a voicemail.</p>	<p><b>Office Location:</b> BBH-352A</p> <p>Office Hours: Mon/Wed. 11 am – 12 pm Tues. 1 – 3 pm or by appointment</p> <p>Like our classroom, my office is in Bernard Brommel Hall (BBH) near other biology offices on the third floor.</p>
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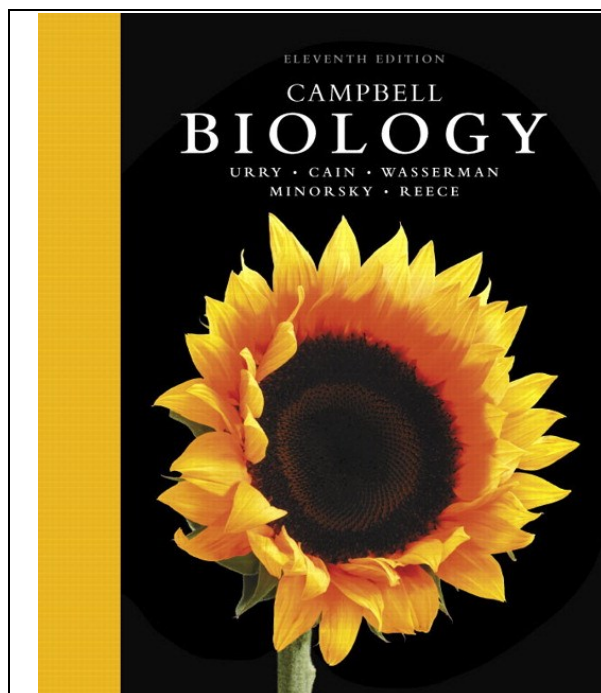
**COURSE INFORMATION**

Credit Hours: 4

Course Description (from course catalog): The first course of our introductory biology series focuses on the organismal aspects of biology, including: the basic structure of animal and plant cells; intracellular organelles; metabolic pathways; the cell cycle; and basic genetics. Laboratory exercises emphasize scientific method and writing, and include experience with basic techniques such as microscopy, biological assays, and gel electrophoresis. Lecture and laboratory.

Course Prerequisites: (MATH-092 - 499 or MATH-092A - 499Z or NEIU Math Placement Result 30 - 45 or ACT Math 22 - 36 or Accuplacer College Level Math 020 - 120) and (ESL-120 or ELP-099 or NEIU English Placement Writing 7 - 9 or ENGL-101 - 102 or (Accuplacer WritePlacer 4 and Accuplacer Sentence Skills 095 - 120) or (Accuplacer WritePlacer 5 - 8 and Accuplacer Sentence Skills 020 - 120)) and (READ-095 - 116 or ACT Reading 20 - 36 or NEIU English Placement Reading 5 - 9 or Accuplacer Reading Comp-080 - 120). Corequisite: BIO-150.

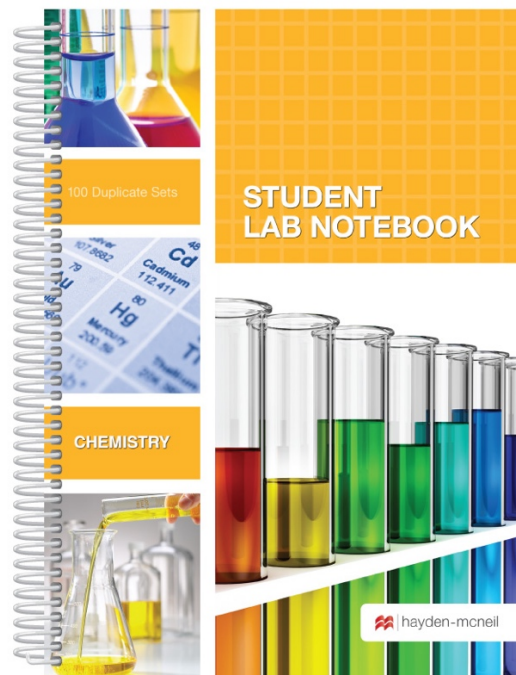
## COURSE MATERIALS



**Campbell Biology, 11<sup>th</sup> edition with Modified Mastering Biology access**

Urry et al., 2017, Pearson. ISBN 0134724879

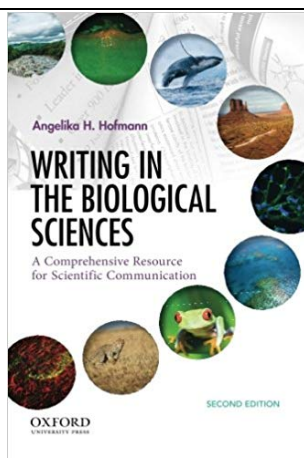
You will need access to the [Mastering Biology website to complete homework assignments](#). We will talk about different options for purchasing on the first day. Feel free to come to class before buying your book.



**Chemistry – Spiral Side Bound 100 set**

Hayden McNeil (ISBN 978-1-4292-2454-3)

Or another laboratory notebook capable of making duplicate copies. *Note:* You can use a notebook from a previous class if it is more than half empty. You may use one notebook for Bio 150 and Bio 201.



**Writing in the Biological Sciences: A Comprehensive Resource for Scientific Communication, 2<sup>nd</sup> Edition.**

Hofmann, A.H. 2015. Oxford University Press. ISBN: 978-0-19-024560-3. This is

the book you will use if you take Bio 150 this semester.



**A non-graphing calculator**

You may not use a graphing calculator or cell phone calculator on exams.

## COURSE OBJECTIVES

Upon successfully completing the course, students will be able to:

- Relate the structures of atoms, molecules, and macromolecules to their biological functions.
- Identify and describe the structure and function of cell components, including organelles. Describe the movement of substances within the cell and across membranes.
- Diagram energy flow in plant and animal cells including the kinetics of enzymatic reactions and the processes of cellular respiration and photosynthesis.
- Describe genetic processes, including mitosis and meiosis, the synthesis of DNA, RNA, and protein, and modes of inheritance.
- Apply the scientific method to develop questions, hypotheses, and experimental designs; effectively communicate and interpret research results in written lab reports.

## STUDENT TASKS / ASSIGNMENTS / REQUIREMENTS

**Grading policies:** There are four different components (Fig. 1) that will make up your final grade. See the *Actions of Successful Students* *handout* for more detail.

**Quizzes** will take place in both lecture and lab. They will have a variety of different formats (open or closed book/note, announced or surprise/“pop”, individual or group).

**Exams** will consist of a mix of question types including multiple choice, short-answer, and long-answer/essay. A portion of the final exam will consist of an oral interview with the instructor. *To do well on exams, you must understand and be able to apply concepts, not just memorize information.*

**Online Homework** will be completed using the Mastering Biology website. Different assignment types will help you become familiar with new material and review for exams.

**Class and Lab Assignments** will give you a chance to gauge your understanding and apply what you’ve learned. Many of these assignments will be collaborative, so you will also strengthen your organization, communication, and teamwork skills.

**Late work:** Because this course moves quickly, it is important that you do not fall behind.

- **Late submissions for the online homework will not be accepted.** You should start early on these assignments in case you experience technology glitches near the deadline.
- **If you know you may be late to class on a particular day, please let me know in advance.** Many assignments are due at the start of class. If you are more than 10 minutes late to class, there will be a 10% late submission deduction.
- **If you feel you have a valid reason for needing an extension on another assignment type, you must contact me before the stated deadline.** If I grant an extension, I may deduct 10% to 25% for late submission depending on the circumstances.

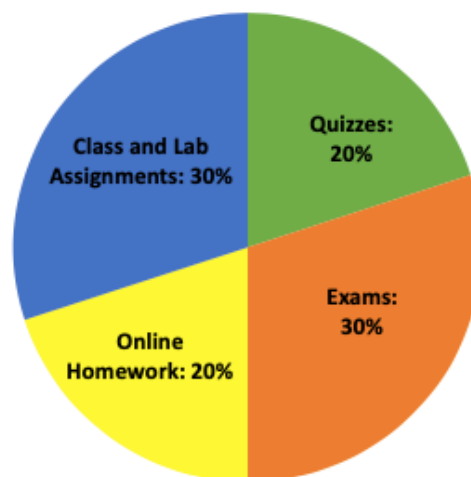


Figure 1: Grade categories and their relative contribution to the final course grade.

**Make-ups:** Make-up exams will only be allowed in cases when the student has documentation (e.g. doctor's note) of an illness or other emergency. In the event of such an emergency, **you must contact me before the start of the exam.**

**Course outline:** See the course schedule on page 5.

## **COURSE POLICIES AND STATEMENTS**

**Basic Needs and Student Resources:** I understand that your performance in class can be impacted by difficulties in your life, including serious concerns like access to food, secure housing, and quality healthcare. The *Resources for Students* handout describes some options that may be helpful to you. If you are struggling, please don't hesitate to come talk with me. Depending on the scenario, I may or may not be able to make adjustments to course deadlines or assignments, but I will do my best to help you locate additional resources.

**Absence Policy:** You are expected to be present and punctual for class. Attendance will be taken in lecture and lab. I do understand that illness and emergencies happen, but it is important to be present whenever possible. You will not be able to make up any quiz or in-class assignment for a class you miss, but there will be a small number of extra credit items in each of these categories to give you a chance to earn back credit from missed classes. It is very difficult to make-up a lab period because of the scheduled removal of each week's supplies. If you know you must miss a lab, please notify me as far in advance as possible.

**Academic Integrity Policy:** By enrolling in this course, you are bound by the NEIU Student Code of Conduct: <http://www.neiu.edu/university-life/student-rights-and-responsibilities/student-code-conduct>. You will be informed by your instructor of any additional policy specific to your course regarding plagiarism, class disruptions, etc.

**ADA Statement:** Northeastern Illinois University (NEIU) complies with the Americans with Disabilities Act (ADA) in making reasonable accommodations for qualified students with disabilities. To request accommodations, students with special needs should make arrangements with the Student Disability Services (SDS) office, located on the main campus in room D104. Contact SDS via (773) 442-4595 or <http://www.neiu.edu/university-life/student-disability-services>.

**Campus Safety:** Web links to Campus Safety: Emergency Procedures and Safety Information can be found on NEIUport on the MyNEIU tab or as follows:  
[http://homepages.neiu.edu/~neiutemp/Emergency\\_Procedures/MainCampus/](http://homepages.neiu.edu/~neiutemp/Emergency_Procedures/MainCampus/).

**COURSE OUTLINE**

<b>Week</b>	<b>Monday (Lecture)</b>	<b>Wednesday (Lab)</b>
1 (1/6)	Course introduction, expectations, and Ch. 1 overview; Video and Activity about Lactase	<i>Lab Activity:</i> Testing for Lactase Persistence
2 (1/13)	Chemistry (Ch. 2)	<i>Lab exercises:</i> Micropipetting and Chemistry Model Kits
3 (1/20)	<b>MLK DAY - NO CLASS</b> Read Chemistry of Water (parts of Ch. 3)	<i>Lab Activity:</i> preparing buffers <i>Student Designed Experiment:</i> How Does pH Affect Lactase Activity?
4 (1/27)	Review Ch. 1-3 Start Carbon Chemistry (Ch. 4)	<b>Exam 1: Ch. 1-3</b> <i>Post-exam:</i> Exploring Carbon Chemistry with Model Kits
5 (2/3)	Exploring Macromolecules (Ch. 5) using Chemistry Model Kits	<i>Lab Activity:</i> Detecting the Digestion of a Lipid <i>Go over exam</i>
6 (2/10)	Exploring Macromolecules (Ch. 5) Membrane Structure and Function (Ch. 7)	<b>LINCOLN'S BIRTHDAY - NO CLASS</b> <i>Take-home Lab Activity:</i> Testing for Membrane Permeability
7 (2/17)	<i>Lab Activity:</i> Exploring the Structure, Function, and Diversity of Cells (Ch. 6) using microscopes	Discuss take-home lab and wrap-up Unit 2, review for exam
8 (2/24)	<b>Exam 2: Ch. 4-7</b> <i>Post-exam:</i> Activity to Learn More about Enzymes (Ch. 8)	<i>Lab Activity:</i> Catechol Oxidase Activity, Part 1
9 (3/2)	<i>Student Designed Experiment:</i> Catechol Oxidase Activity, Part 2 <i>Go over exam</i>	<i>Lab Activity:</i> Measuring Cell Respiration in Yeast
10 (3/9)	Cellular Respiration (Ch. 9)	Peer Review of lab report/writing workshop Photosynthesis (Ch. 10)
3/16 – 3/20	<b>SPRING BREAK – NO CLASS</b>	
11 (3/23)	The Cell Cycle and Mitosis (Ch. 12) <i>Lab Activity:</i> Observing and modeling cell division	Meiosis and Sexual Life Cycles (Ch 13) <i>Lab Activity:</i> Observing and modeling cell division (cont.)
12 (3/30)	Wrap-up Unit 3, review for exam	<b>Exam 3: Ch. 8 – 10, 12 – 13</b>
13 (4/6)	Mendelian Genetics (Ch. 14) <i>Activity:</i> Lactase Pedigrees	Chromosomal Genetics (Ch. 15); Introduction to Chi-Square tests
14 (4/13)	<i>Activity:</i> Using Pedigrees and Chi-Square Tests to Study Disease	Inheritance Requires DNA Replication (Ch. 16)
15 (4/20)	Gene Expression: Transcription and Translation (Ch. 17)	<i>Activity:</i> DNA Technology
16 (4/27)	Final Exam Review	
<b>FINAL</b>	<b>FINAL EXAM: THURSDAY APRIL 30, 2:00 – 3:50 pm</b> <b>(Final is cumulative, with most weight given to Chapters 14 – 17)</b>	