

BIOL201-01 Fall 2019

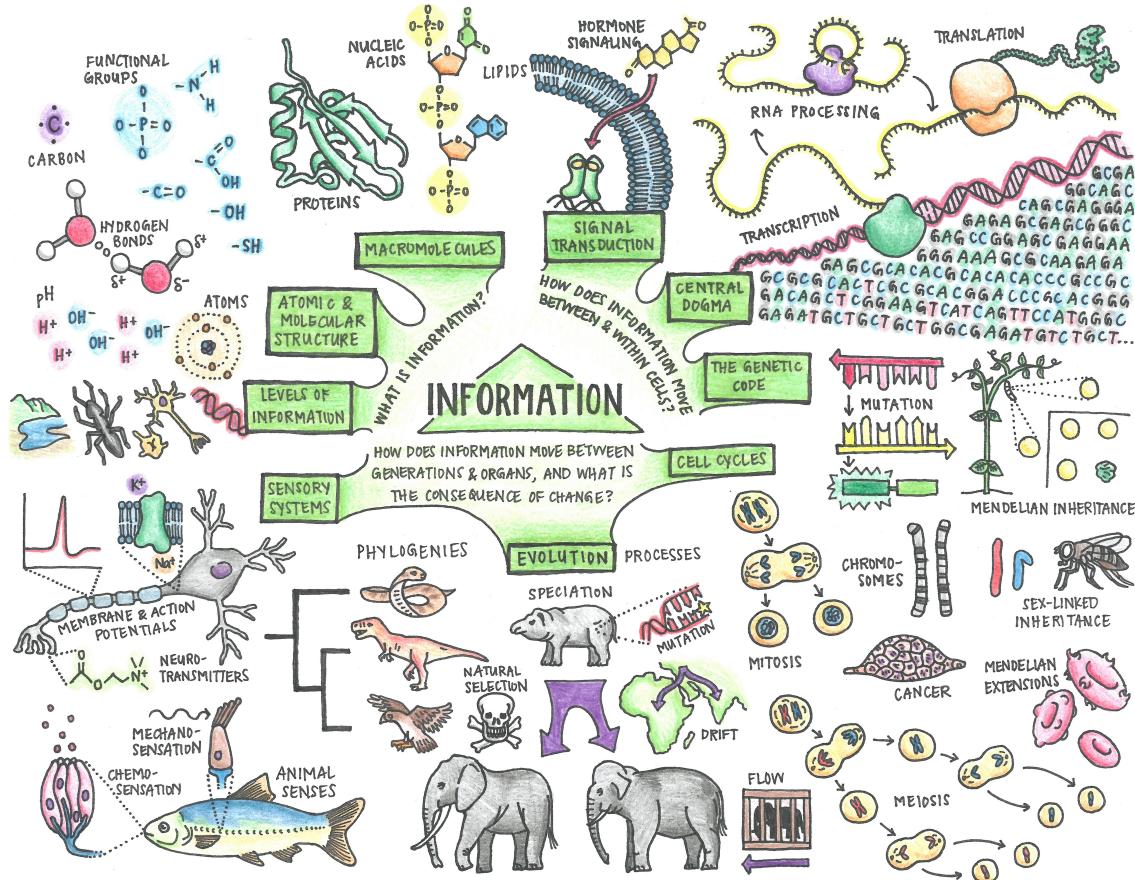
Introductory Biology: Flow of Information

MWF 9:15-10:20 AM, Strain Hall 121

Course Information & Syllabus

Instructor: Dr. Chris Templeton
Office: Strain 203b
Phone: (503) 352-3149
E-mail: templeton@pacificu.edu

Office Hours:
 Mondays 10:20-11:20am
 Thursday 1:00-2:00pm
 and by appointment (email me to schedule)



Welcome to BIOL201 - Introductory Biology: Flow of Information! This course is one of two introductory biology courses at Pacific University (BIOL200 and BIOL201), which can be taken in either order. In this course, we focus on the flow of information in biological systems. We learn how information is coded (the "languages" of life) and follow how types of information flow across different levels of organization from molecular and cellular levels to organismal and population levels. We also integrate across these levels of biological organization and study the evolutionary changes in information that occur over time.

Catalog Course Description

This course explores the flow of information in biological systems, integrating across all levels of biological organization. Topics include: animal behavior, endocrine and nervous systems, signal transduction between and within cells, and the molecular language and processes necessary for storing and transmitting biological information. Information flow between generations will be covered along with mutations, microevolution, and macroevolution.

Corequisite: Biol201L. 4 credits.

Course Goals & Student Learning Outcomes

This course examines a key element of life – information – at all levels of biological organization. We will learn how information can be stored, and how it moves through biological systems. You will have many opportunities to apply ideas and information by exploring case studies, amazing stories of natural history, and questions relevant to issues in society. In addition, in the laboratory component of the class you will have opportunities to learn and practice basic lab skills and methods of scientific inquiry.

After successfully completing this course, students will be able to:

- **Recognize** the types of information in biological systems and **explain** information transfer at different levels of organization.
- **Identify** and **describe** the structure and function of information molecules.
- **Explain** and **interpret** graphs and other data related to the capture, use, and transfer of information in biological systems.
- **Apply** foundational knowledge and concepts to **analyze** current events and novel problems, including ones facing our society.

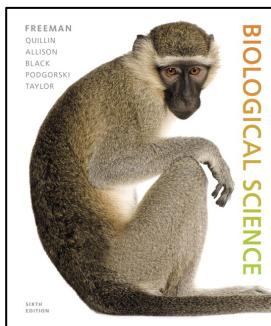
This course also provides the following learning outcomes for the **Biology major**:

- **Demonstrate** deep understanding of five core concepts in biology: evolution; pathways and transformations of energy and matter; information flow, exchange, and storage; structure and function; and biological systems.
- **Use** the standard skills and methodologies of biology to **answer** scientific questions.
- **Apply** the scientific method, reasoning and appropriate mathematics to **describe**, **explain**, and **understand** biological systems.
- **Use** interdisciplinary approaches (applying chemistry, physics, and mathematics to biology) to **work on** biological problems.
- Effectively **read**, **write**, **speak** and **understand** scientific material.
- **Collaborate** and **communicate** within biology and across disciplines.
- **Apply** science to issues facing our society.

In addition to other learning objectives, this course also fulfills the following learning outcomes for the **Natural Sciences core requirements**:

- **Use** scientific methods and reasoning within the context of the natural sciences.
- **Recognize** the distinctive nature and limits of scientific knowledge: that it is an evolving model of the natural world, discovered and verified through experimentation and observation.

Required Materials



1. **Biological Science, Freeman 6th ed.** (monkey cover). This is available in the bookstore as either a hardcover, loose-leaf, or e-text. You can choose the version which suits you best.
2. Subscription to **Mastering Biology**. All versions of the textbook purchased through the bookstore come bundled with a 2-year subscription.
3. An Internet- and/or text-message-capable device, such as a **laptop, tablet, or cell phone**.
4. A **3-ring binder** for materials (a 1" binder will work well).

Online Interactions



I will use your **Pacific University e-mail address** to send occasional but important information. Check this account regularly, or forward messages to an account you use.



I will regularly use **Moodle** to post course information and materials, including learning objectives, assignments, exams, and other important information. Visit Moodle regularly. Note: there are separate Moodle sites for the lecture and laboratory sections of this course.



The **Poll Everywhere ID** for this course is: **templetonbio201** (on the Poll Everywhere app) or PolleV.com/templetonbio201 (on a web browser). You will need to make an account by providing a username and password, and register for our section using the registration link posted to Moodle.



The **Mastering Biology ID** for this course is: **BIOL201FALL2019** An access code for 2-year subscription to Mastering Biology is bundled with the textbook. Alternatively, you can subscribe by registering as a student at: <https://www.pearsonmylabandmastering.com/>. You will be prompted for the MB Course ID (above) and payment details.

Email is the best way to get in touch with me outside of class hours. All email you send to me should be from your pacificu.edu address. Remember that email should be conducted as formal correspondence, not like a text message. For all emails, (1) include relevant details in the subject line (e.g. "Biol201 Transcription Question"), (2) use a proper salutation (e.g. "Hello Prof Templeton,"), and (3) sign with your own name. Following this framework will help ensure I do not accidentally overlook your message.

Note: I will do my best to try and reply to your email in a timely manner (usually within 24 hours). However, I do not check my email in the evenings (after 5 PM) or on weekends, so please be patient or plan ahead with questions.

Readings & Resources

I will post a list of reading assignments to Moodle for each unit. In these assignments, I will often indicate specific sections of the text. Readings may include full chapters, specific pages, figures, tables, or concepts. The name of the assigned component tells you where to find it. For instance, Figure 5.2 will be the second figure in Chapter 5. Your textbook readings will also be supplemented with online animations, short videos, and other tools.

Grading and Assessments

Your grade in this course will be calculated using your performance on various assessments, including exams, quizzes, in-class assignments, and lab assignments. All assignments must be turned in on time, and there are no "make-up" quizzes or exams.

1. Exams

60%

There will be three unit exams across the semester and a final assessment each worth 15%. Exams will consist of questions in a variety of formats including multiple choice, short answer, and short essay. Each exam focuses on the new material, but assumes knowledge of material from prior units.

2. Lecture assignments

20%

This includes quizzes, worksheets, activities, and other assignments associated with the lecture portion of the course. I will drop ~ 10% of in-class/online activities, thus your grade will not be impacted by an occasional missed quiz or assignment.

3. Laboratory assignments

20%

Points for laboratory assignments will be assigned separately by your laboratory instructor. To pass BIOL201/201L, you must earn at least 50% of the points available in lab and have no more than three lab absences.

Grades on exams and assignments will be posted for your information on Moodle. I keep a separate, official gradebook outside of Moodle. You have one week after you have received your graded exam or assignment to request any adjustments to the grade. In addition, you must save all returned assignments and exams until the end of the course. If I request to see a graded assignment or exam again and you cannot return it to me, you will receive a zero for that assignment or exam.

Grading

Letter grades will be assigned as follows:

A: > 90% B: 80% - 89% C: 70% - 79% D: 60% - 69% F: < 59%

Plus and minus grades will be assigned as follows: percentages ending with 7.0 to 9.9 will be given a plus (e.g., 87.0-89.9% = B+); percentages ending with 0.0 to 2.9 will be given a minus (e.g., 80.0-82.9% = B-). The highest grade you can earn is an A. There is no extra credit. Grades are neither curved nor rounded meaning that every student can achieve an A. You are not competing with other students so work together honestly and ethically.

Reminder: you must earn a C- or higher to progress to the 300-level BIOL courses, or to fulfill your core Natural Science requirement.

Workload and Expectations

I will work hard to facilitate your learning, but only you can actually learn the material through focused time and effort within and outside the classroom. **As a reminder, Pacific guidelines state that students should be putting in 2-3 hours outside of class for every credit.** This means that you should expect to work on this course for at least 8-12 hours per week outside of class time to succeed in this course. This includes doing readings, assignments for both lecture and lab, reviewing material, and studying for quizzes and exams.

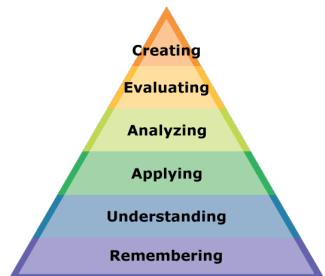
Students learn best when they are active participants in the class. This class involves extensive in-class activities that require you to work with information and concepts. Before each class, you will learn some basic information (from the textbook and online resources such as animations or videos). In class, I will intersperse short lectures with problem-solving, data interpretation, quizzes, and practice exam questions. I expect that students enrolled in this course are adults who take responsibility for their own education. That includes arriving to class on time and prepared, remaining engaged, participating, avoiding distractions, and treating your instructor and classmates fairly and with respect. You can expect the same from me throughout the course. You can also expect me to be supportive, fair, and honest, to return materials in a reasonable time frame, and to be available to you outside of class.

Lecture and lab are key learning opportunities. Missing either could negatively impact both your learning opportunities and your grade. If you know you will miss class (e.g. for an approved, scheduled university event), please let me know ahead of time and I will do my best to help you. If you miss class, please do not ask me "did I miss anything important?" Instead, talk to your fellow students and try to get copies of notes and handouts. If you have questions after speaking with students and studying, please come talk to me for further clarification.

Occasional in-class activities will require you to use your mobile device or laptop. Your device must be in silent mode at all times during class! Do not make or answer calls, texts, or otherwise use your phone for non-classroom activities during class. I have a **zero-tolerance policy for inappropriate device use in class**. If we are not actively using devices for a class-related purpose, it must be face-down on your desk, off, or put away. If I see you distracted by your device (even glancing at incoming texts), you will lose all in-class points for the day. If you have a good reason to use your device during class (e.g. a family emergency in progress), please let me know before class starts.

Suggestions for learning and studying

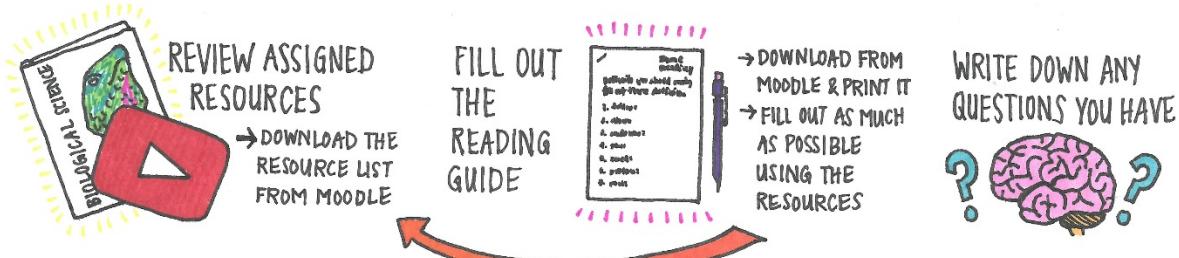
I highly recommend using paper and pen/pencil to take notes in class (versus using a computer). A study by Oppenheimer and Miller (2014) found that we learn better when we put pen to paper because it makes us process information more deeply.



I challenge each of you to reflect on how you learn. This includes exploring new ways of studying, utilizing available resources, and forming peer learning communities. In this and other courses, remembering and understanding information is a first critical step, but deep learning comes when we can use that knowledge to analyze and evaluate scenarios and ideas. Reviewing the concepts is essential, but don't forget to also practice using the concepts for higher order thinking.

HOW TO STUDY FOR BIOL 201

... PREPARE FOR CLASS ...



TAKE NOTES



WRITE & DRAW WHAT IS WRITTEN ON THE BOARD



WRITE DOWN WHAT IS SAID

→ WRITING NOTES BY HAND HAS BEEN SHOWN TO HELP YOU LEARN BETTER*

→ DEVELOP ABBREVIATIONS & SHORTHAND FOR FASTER NOTE-TAKING (B/C = BECAUSE)

PARTICIPATE

ASK QUESTIONS:

- ONES YOU WROTE DOWN EARLIER
- ONES THAT COME UP DURING CLASS



WORK WITH YOUR GROUP

- EXPLAIN YOUR THOUGHT PROCESS

AFTER & BETWEEN CLASSES



STUDY EVERY DAY

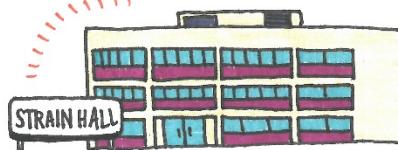
→ 30-60 MINUTES / DAY

STUDY WITH FRIENDS OR CLASSMATES



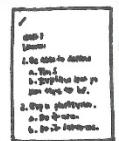
- EXPLAIN CONCEPTS TO EACH OTHER
- WORK THROUGH READING GUIDES, LEARNING OBJECTIVES, AND WORKSHEETS FROM CLASS
- SPEND TIME ON CONCEPTS THAT ARE DIFFICULT

* MUELLER & OPPENHEIMER 2014 PSYCHOLOGICAL SCIENCE



ATTEND OFFICE HOURS

WRITE OUT ANSWERS TO LEARNING OBJECTIVES



- DOWNLOAD FROM MOODLE & PRINT IT
- PRACTICE ANSWERING IN AN EXAM-LIKE SITUATION (QUIET, CLOSED NOTE, ETC.)



- DON'T COPY FROM YOUR NOTES OR THE RESOURCES

Pacific University Resources

Tutoring Services

CLASS (Center for Learning and Student Success) is located on the 2nd-floor of the Tran Library. The center focuses on delivering one-on-one and group tutoring services for foreign languages, math and science courses, and writing skills in all subjects. Students should consult with the center's director and look for campus advertisements regarding tutoring available. Day and evening hours. <http://www.lib.pacificu.edu/class/>

Office of Accessibility and Accommodation Services (OAA). Support services and reasonable accommodations are available to students covered under the Americans with Disabilities Act. If you have a documented disability and require accommodations in this course, you must contact the Office of Accessibility and Accommodation Services (OAA) at 503-352-2171 (oaa.contact@pacificu.edu). Staff members will meet with you, review the documentation of your disability, and discuss the services Pacific provides and any specific accommodations you require for certain courses. It is extremely important that you begin this process at the beginning of the semester or earlier.

Student Counseling Center

The counseling center offers individual counseling, crisis services, referrals, and workshops. They also have information on-line or in their office about issues such as stress management and sleep. <http://www.pacificu.edu/studentlife/counselingcenter/>

Pacific University Policies

I expect students to know and adhere to the university's Academic Expectations and Code of Academic Conduct policies. Please carefully read them in the College of Arts and Sciences catalog. <http://catalog.pacificu.edu/content.php?catoid=2&navoid=69>

Academic Misconduct

Pacific University has no tolerance for academic misconduct/cheating. It is university policy that all acts of misconduct and dishonesty be reported to the Associate Dean for Student Academic Affairs. Sanctions that may be imposed for such misconduct range from an "F" for the assignment, an "F" for the course, and suspension or dismissal from the university. Forms of academic misconduct include but are not limited to plagiarism, fabrication, cheating, tampering with grades, forging signatures, and using electronic information resources in violation of acceptable use policies. If you have a question about what constitutes dishonesty, please talk to me before you turn in assignments.

As a reminder, here are some examples of academic dishonesty and plagiarism:

- Copying the work of another student on an exam or assignment, including labs;
- Having notes or crib sheets accessible during exams or quizzes, even if you don't use them;
- Cutting and pasting phrases or sentences from textbooks, articles, or websites;
- Re-using an assignment from another class, including other intro bio courses;
- Insufficient attribution for ideas and information from published resources.

Unauthorized Recordings

Students are prohibited from making audio and/or visual recordings of lectures or presentations without prior, written consent of the instructor or presenter.

Course Schedule and Important Dates

Dates	Topics
Unit 1 Weeks 1-4 26 Aug-18 Sept	What is Information? <ul style="list-style-type: none">• Information in Biology• Chemistry of Biology• Languages of Molecular Information (nucleic acids, proteins, hormones)
	Exam 1: Friday, 20 September
Unit 2 Weeks 5-8 23 Sept-18 Oct	How does information flow? <ul style="list-style-type: none">• Signal Transduction• Transcription• Translation• Mendelian Genetics
	Exam 2: Monday, 21 October
Unit 3 Weeks 8-12 23 Oct -15 Nov	What are the consequences of how information flows and changes? <ul style="list-style-type: none">• Cell cycle, Mitosis, & Meiosis• Evolutionary processes• Phylogenies• Speciation• Animal Nervous & Sensory Systems
	Exam 3: Monday, 18 November
Weeks 13-14 20 Nov-2 Dec	Case Study on Stress
	Final Exam: Tuesday 10 December, 3-5:30pm

NOTE: Exam dates will not change and **there are no make-up exams.** If you have a conflict with any of the Unit exams because of a university-related event, you must let me know in writing and in person.

Other important dates:

- **Monday, September 9:** Last day to drop a class with no record*
- **Friday, November 1:** Last day to withdraw from courses*
- **Monday, September 2:** Labor day! No class
- **Friday, October 4:** Fall break! No class
- **Wednesday-Friday, November 27-29:** Thanksgiving! No class

*Check with your academic advisor and the Registrar for details if you are considering dropping or withdrawing from the course.

BIOL201 Contract, Fall 2019**Due Wednesday, 28 August 2019**

I have read the syllabus completely, and understand all course requirements. I also understand the course policies, including those regarding academic honesty, attendance, missed exams, homework, and keeping all graded work. I recognize that it is my responsibility to seek clarification regarding any aspect of the syllabus, the course requirements, or the grading policies if they are unclear to me.

Signature: _____ **Date:** _____

Name (please print!):

Preferred Name, Nickname, Pronunciation, Pronouns:

Student Information This information helps me tailor the course to your background.

1. Lab Section for this course:
2. Where do you see yourself 5 years from now? 10 years from now? If you have no idea, tell me about some of your interests and ideas.
3. What other courses you are taking this semester (course names, please):
4. When and where was your last biology course? (e.g. high school 17; Biol200 last semester, etc.)
5. When and where was your last chemistry course?
6. Extracurricular activities you are participating in this semester:
7. Any concerns you have about this class?
8. What are one or two things you would like me to know about you?
9. Anything you would like to know about me?