

General Biology 2

AS.020.152.01 (section 1), three credits

Spring 2019

The Johns Hopkins University

INSTRUCTORS

Rebecca Pearlman, Ph.D.

281 UTL

pearlman@jhu.edu

(410) 516-5479

office hours:

Fridays 9:30am – 11:30am,
or by appointment

Richard Shingles, Ph.D.

281 UTL

shingles@jhu.edu

(410) 516-4679

office hours:

Tuesdays 12:00pm – 2:00pm,
or by appointment

CLASS MEETINGS

Lectures: Monday, Wednesday, Friday, noon to 12:50pm, Remsen 1

Problem Solving Sessions: Every Monday, Tuesday, Wednesday and Thursday from 6pm-9pm

289 Undergraduate Teaching Lab (drop in anytime during these hours!)

Midterm Exams: Three Wednesdays, in class, see schedule for dates

COURSE DESCRIPTION

This course builds on the concepts presented and discussed in General Biology I. The primary foci of this course will be on the diversity of life and on the anatomy, physiology, evolution and ecology of plants and animals. There will be a special emphasis on human biology.

REQUIRED MATERIALS

TEXTBOOK and LAUNCHPAD: Hillis, Sadava, Hill and Price, *Principles of Life*, 2nd edition, Sinauer Associates, Inc., 2014.

- You have **two choices** for how to purchase this resource.

OPTION #1: Purchase *both* the paper textbook and access to LaunchPad. The LaunchPad is an online resource that contains sample exam questions, animations, exercises, and a full copy of the textbook. If you buy your paper textbook new at the JHU Bookstore (<http://johns-hopkins.bncollege.com/>), it will come with a card giving you 12-month access to the LaunchPad website. If you buy a used copy of the textbook, you will need to purchase access to the LaunchPad separately at <http://www.macmillanhighered.com/launchpad/hillis2e/9025343>

- **Pro:** We will be reading THREE detailed chapters a week from the textbook. Most students find it much easier to read from a printed page than from a screen. Also, many students find it helpful to keep the textbook as a reference for advanced courses and for standardized tests like the MCAT. **Note that if you purchase this from the Bookstore, you have the option of purchasing the voting unit with it as a bundle.**
- **Con:** This option is slightly more expensive than option #2.

OPTION #2: Purchase *only* LaunchPad access

(<http://www.macmillanhighered.com/launchpad/hillis2e/9025343>).

- **Pro:** This option is slightly cheaper than option #1.
- **Con:** You can only read the textbook during this school year AND only while you are connected to the Internet. Also, some students find it harder to stay focused while reading large volumes of text on a computer screen.

VOTING UNIT AND REGISTRATION: remote control used for in-class voting; also known as an “iClicker2”; ISBN-13: 978-1-4-2928047-1

- You may either purchase this individually or as a bundle with the paper textbook through the Bookstore.

iClicker2 registration is free and is available on our Course website

OTHER COURSE RESOURCES

1. PROBLEM SOLVING SESSIONS AND MENTORS

Mentors are former General Biology students who staff weekly Problem Solving Sessions (see Class Hours above for times). The Problem Solving Sessions are drop-in help sessions designed to assist you with assignments and with preparing for exams. There will be sample exam problems available here that are not available elsewhere, some of which will appear on your exams. We encourage you to attend!

2. OFFICE HOURS

You are welcome to stop by anytime the instructors have office hours, and you do NOT need to make an appointment first. We will add extra office hours before exams and will announce them on the course website.

3. LEARNING DEN TUTORING AND STUDY CONSULTING

(<http://advising.jhu.edu/tutoring-mentoring/learning-den-tutoring-services/>)

The Learning Den is a campus-wide group tutoring service that holds sessions specifically for General Biology. Visit the Learning Den website to schedule an appointment for a tutoring session.

Study Consulting is a one-on-one service that helps students with overall study strategies and time management.

4. COURSE WEBSITE (<http://blackboard.jhu.edu>)

The course website is designed to help you master biology and contains all kinds of useful information, such as...

- Weekly assignments
- Pre-class videos
- Old Exams (see “Study Aids”)
- Recordings of our classes
- Link to the LaunchPad
- Instructions for what to do if you will miss class and therefore in-class voting (see “How Do I..”)
- Much more!

WHILE YOU'RE IN CLASS

Hopkins is a community of scholars, and each member of this community deserves to be treated with respect and civility. In large courses like General Biology, the careless behavior of just a few students can result in significant distraction. Such actions are disrespectful not only to the instructor, but also to other students and are inconsistent with the principles underlying a community of learners. Please make it a point to pay attention when you are in class. Do not watch movies on your computer, or constantly email, text, or surf the web during class. This is very distracting to others around you, and it prevents you from paying attention. Do not pack up your belongings before class ends. Respect your peers and the instructor for the short time we spend together each week. If the instructor or another student asks you to quiet down, please respect their request.

CLASS ASSESSMENTS AND ACTIVITIES

You should expect to spend a significant amount of time in class working with your peers on questions and problems that are relevant to the topics we discuss. Sometimes, we will ask you to work in groups on a series of problems to help you assess your own understanding of the material, and to help you formulate and ask questions. At other times, we will ask you to discuss questions posed to the class and submit an answer electronically. Below is a summary of assessments and activities you can expect to see.

1. CLASSROOM PARTICIPATION: THE iClicker2 VOTING SYSTEM

To help make classes more interactive and student-centered, we will use an electronic voting system to allow you to submit responses to posted questions during class. You will need to purchase an iClicker 2 voting unit to electronically submit your responses. The iClicker 2 can be purchased from the bookstore either as a bundle with the textbook, or individually.

Your iClicker 2 must be registered on our course website (blackboard.jhu.edu) in order to receive credit for your votes.

You are responsible for maintaining a functioning battery in your iClicker2 voting unit. At the end of the school year, your iClicker2 unit may be resold back to the JHU Bookstore or to another student. However, keep in mind that other courses do require the use of the iClicker2 units.

Classroom participation in the form of iClicker2 votes will count towards your final grade in this course. Points are awarded for participation, regardless of whether or not your answer is correct. However, please bear in mind that some iClicker2 questions may also appear on exams. You will be assigned one score per class period for class participation. Bear in mind that partial scores are possible. For example, if you participated in only two of the three votes on a given day, you will receive a score of 67%. If you participated in none of the votes that day, you will be assigned a score of 0%.

At the end of the semester, your average daily class participation score will be calculated. If this score is 80% or better, you will receive a final score of 100% for classroom participation. If your average daily class participation score is less than 80% of the classroom votes, your average score will be your final score. For example, if your average score is 71%, you will get a final score of 71% for classroom participation.

Please bring your iClicker2 unit every day that class meets. If you believe that your voting unit is malfunctioning, you must notify the instructors on the same day immediately after class (either in person or via email). If you will be missing class due to illness, religious observance, team sporting event, or emergency, submit the form on the course website by noon the day you will miss class to be excused from the votes that day. The form is in the “How Do I…” section of the website. It is a violation of the university’s ethics policy to give your voting unit to someone else to have them vote for you during your absence. If you have a legitimate reason to miss class, please use the form.

2. PRE-CLASS VIDEOS (PCV’s)

We will occasionally post short (5-10 minute) pre-class videos. Please keep an eye on the Announcements section of our course website for notice of when each video is released. Pre-class videos will be in the PCV Assignments section of the course website. Each video will be posted at least twenty-four hours before the class it is designed to prepare you for. The goal of each video is to provide vital background information that will help you understand the material we cover in class better.

When you watch the video, be sure to answer any questions contained within the video. (It is best to use a computer to answer these questions, not a phone or tablet, due to software the university is using.) As long as you answer the questions before the next class, you will receive full credit for completing that pre-class video, even if your answers are not correct.

At the end of the semester, your average pre-class video score will be calculated. If this score is 80% or better, you will receive a final score of 100% for the pre-class videos. If your average pre-class video score is less than 80%, your average score will be your final score. For example, if your average score is 71%, you will get a final score of 71% for the pre-class videos.

3. ASSIGNMENTS

There will an online assignment due nearly *every* Friday at 11pm. Assignments are posted on the course website. Late assignments will not be accepted unless an extension was requested *before* the due date, and only under extraordinary circumstances. Material from assignments will be covered on exams. **Completing an assignment requires both SAVING your answers and SUBMITTING the assignment by the due date and time.** If you save your answers for an assignment but forget to submit it, we will submit *one* assignment for you without any deduction. The second unsubmitted assignment will be submitted for half credit. You will NOT receive any credit for the third or any successive unsubmitted assignments.

4. EXAMS

There will be three midterm exams in this course, as well as a cumulative final. **Please see the course schedule for dates and times.** All exams will be in our usual lecture room.

If you have a conflict with an exam time, it is your responsibility to notify the instructors as soon as possible BEFORE the exam. Acceptable conflicts include team sporting events, religious observances, illness or injury. If you are ill or injured, you must visit Health and Wellness (or another medical facility) within 24 hours of the exam time and email official documentation to the instructors. It is NOT acceptable to miss our exam due to illness or injury and then *still* take an exam in another course on the same day.

There will be no make-ups for a missed midterm exam. Excused exams will not count towards your final grade, instead, the other midterm exams will count more. If the final exam is missed due to an emergency or illness, arrangements must be made to take the exam at another time.

After each exam, we will use the raw score constituting the 90th percentile to equal a grade of 100%. All grades for that exam will be determined based on this 100%. Therefore, it is possible to receive an exam grade above 100%. Note that this system will *never* lower a student's raw score. You can assign a letter grade to each exam grade using the chart at the end of this syllabus.

GRADING

Grades will be based on the following assessments:

ASSESSMENTS	PERCENT OF FINAL GRADE (using Calculation Method #1)*	PERCENT OF FINAL GRADE (using Calculation Method #2)*
Class Participation	5%	5%
Assignments	15%	15%
Pre-Class Video Questions	5%	5%
Midterm Exams	45% (15% for each midterm exam)	37.5% (15% for your best two midterms, and 7.5% for your lowest midterm)
Final Exam	30%	37.5%

* In order to minimize the impact of a single low midterm score, we will calculate your final grade two ways. Calculation Method #1 weights all three midterms equally. Calculation Method #2 discounts the weight of your lowest midterm grade, weighting the final exam slightly more to compensate. *Your final grade in the course will be the larger of these two calculations.*

Final grades will be based upon the following scale, with no additional curving or normalization:

PERCENT SCORE	FINAL GRADE	PERCENT SCORE	FINAL GRADE
92 and above	A	90 - 91 %	A-
87 - 89%	B+	82 - 86%	B
80 - 81%	B-	77 - 79%	C+
72 - 76%	C	70 - 71%	C-
67 - 69%	D+	60 - 66%	D

A+ grades for exceptional performance will be given at the discretion of the instructors.

JOHNS HOPKINS POLICIES AND SUPPORT SERVICES

The Johns Hopkins University (JHU) Arts and Sciences / Engineering Catalog contains information on a wide variety of topics, such as support services, clubs and student organizations, and policies relating to student rights and responsibilities. This course is governed by the policies set forth in this document.

Some JHU student support services you may find useful include...

SUPPORT SERVICE	LOCATION	PHONE NUMBER / WEBSITE
Student Disability Services Office <i>If you are a student with a disability or believe you might have a disability that requires accommodations, please contact the Student Disability Services Office.</i>	Garland Hall 3 rd floor	(410) 516-4720 http://web.jhu.edu/disabilities studentdisabilityservices@jhu.edu
Counseling Center <i>Confidential assistance with personal and vocational concerns</i>	3003 N. Charles St.	(410) 516-8278 http://www.jhu.edu/~ccenter/
Department of Biology website <i>Tips for getting research experience, information on majors and combined bachelors/masters programs</i>	-----	http://www.bio.jhu.edu Click on "Undergraduates"

The information in this syllabus is subject to change.

A WORD ON ETHICS

The strength of the university depends on academic and personal integrity. In this course, you must be honest and truthful. Ethical violations include cheating on exams, plagiarism, reuse of assignments, improper use of the Internet and electronic devices, unauthorized collaboration, alteration of graded assignments, forgery and falsification, lying, facilitating academic dishonesty, and unfair competition. Report any violations you witness to the instructor. You may consult the associate dean of student conduct (or designee) by calling the Office of the Dean of Students at 410-516-8208 or via email at integrity@jhu.edu. For more information, see the Homewood Student Affairs site on academic ethics: (<https://studentaffairs.jhu.edu/student-life/student-conduct/academic-ethics-undergraduates>) or the e-catalog entry on the undergraduate academic ethics board: (<http://e-catalog.jhu.edu/undergrad-students/student-life-policies/#UAEB>).

JOHNS HOPKINS INSTITUTIONS DIVERSITY & INCLUSION STATEMENT

Johns Hopkins is a community committed to sharing values of diversity and inclusion in order to achieve and sustain excellence. We firmly believe that we can best promote excellence by recruiting and retaining a diverse group of students, faculty and staff and by creating a climate of respect that is supportive of their success. This climate for diversity, inclusion and excellence is critical to attaining the best research, scholarship, teaching, health care and other strategic goals of the Health System and the University. Taken together these values are recognized and supported fully by the Johns Hopkins Institutions leadership at all levels. Further, we recognize that the responsibility for excellence, diversity and inclusion lies with all of us at the Institutions: leadership, administration, faculty, staff and students.

COURSE SCHEDULE

Monday 1/28: Course Introduction and History of Life on Earth (Ch. 18, Shingles)

- ***Before Next Class Meets: Register your iClicker2 unit in Blackboard (if not already registered) and replace the unit's batteries.***

Wednesday 1/30: Bacteria, Archaea and Viruses (Ch. 19, Pearlman)

Friday 2/1: Bacteria, Archaea and Viruses (Ch. 19, Pearlman)

- ***Assignment #1 Due***

Monday 2/4: The Origin and Diversification of Eukaryotes (Ch. 20, Pearlman)

- ***Problem Solving Sessions Begin This Evening***

Wednesday 2/6: The Evolution and Diversity of Fungi (Ch. 22, Pearlman)

Friday 2/8: The Evolution and Diversity of Fungi (Ch. 22, Pearlman)

- ***Assignment #2 Due***

Monday 2/11: Animal Origins and Diversity (Ch. 23, Pearlman)

Wednesday 2/13: Animal Origins and Diversity (Ch. 23, Pearlman)

Friday 2/15: The Evolution of Plants (Ch. 21, *will be covered on exam #2*, Shingles)

- ***Assignment #3 Due***

Monday 2/18: The Plant Body (Ch. 24, *will be covered on exam #2*, Shingles)

Wednesday 2/20: SNOW DAY

Friday 2/22: EXAM #1 (covers relevant information from Ch. 18, 19, 20, 22, 23)

- ***No Assignment Due***

Monday 2/25: Plants: Nutrition and Transport (Ch. 25, Shingles)

Wednesday 2/27: Plant Growth and Development (Ch. 26, Shingles)

Friday 3/1: Reproduction of Flowering Plants (Ch. 27, Shingles)

AND Photosynthesis (Ch. 6, Shingles)

- ***Assignment #4 Due***

Monday 3/4: Photosynthesis (Ch. 6, Shingles)

Wednesday 3/6: Fundamentals of Animal Function (Ch. 29, *will be covered on exam #3*, Pearlman)

Friday 3/8: Fundamentals of Animal Function (Ch. 29, *will be covered on exam #3*, Pearlman)

- ***Assignment #5 Due***

Monday 3/11: Nutrition, Feeding and Digestion (Ch. 30, *will be covered on exam #3*, Pearlman)

Wednesday 3/13: EXAM #2 (covers relevant information from Ch. 21, 24, 25, 26, 27, and 6)

Friday 3/15: Nutrition, Feeding and Digestion (Ch. 30, Pearlman)

- ***No Assignment Due***

Mar. 18 – Mar. 22: SPRING BREAK

Monday 3/25: Breathing (Ch. 31, Pearlman)

Wednesday 3/27: Circulation (Ch. 32, Pearlman)

Friday 3/29: Circulation (Ch. 32, Pearlman)

- ***Assignment #6 Due***

Monday 4/1: Muscle and Movement (Ch. 33, Pearlman)

Monday 4/3: Neurons, Senses, Nervous System (Ch. 34, Pearlman)

Monday 4/5: Neurons, Senses, Nervous System (Ch. 34, Pearlman)

- ***Assignment #7 Due***

Monday 4/8: Control by Endocrine and Nervous Systems (Ch. 35, *will be covered on the final exam*, Shingles)

Wednesday 4/10: Control by Endocrine and Nervous Systems (Ch. 35, *will be covered on the final exam*, Shingles)

Friday 4/12: Animal Reproduction (Ch. 37, *will be covered on the final exam*, Shingles)

- ***Assignment #8 Due***

Monday 4/15: Water and Salt Balance (Ch. 36, *will be covered on the final exam*, Pearlman)

Wednesday 4/17: **EXAM #3** (covers relevant information from Ch. 29, 30, 31, 32, 33 and 34)

Friday 4/19: Immunology (Ch. 39, Shingles)

- ***No Assignment Due***

Monday 4/22: Immunology (Ch. 39, Shingles)

Wednesday 4/24: Animal Behavior (Ch. 40, Shingles)

Friday 4/26: Animal Behavior (Ch. 40, Shingles)

- ***Assignment #9 Due***

Monday 4/29: The Distribution of Earth's Ecological Systems (Ch. 41, Shingles)

Wednesday 5/1: Populations (Ch. 42, Shingles)

Friday 5/3: Ecological and Evolutionary Consequences of Interactions within and among Species (Ch. 43, Shingles)

- ***Assignment #10 Due***

Tuesday 5/7: ***Last day to appeal grades on class participation, assignments and midterm exams***

Note: Problem Solving Sessions WILL continue during the Reading Period and the Final Exam period. Drop by for help studying for the final exam!

FINAL EXAM (cumulative): Monday, May 13th, 9am - noon (in Remsen 1)