

Foothill College

Biology 10 – 03/04Z

Winter 2021

January 4 – March 22, 2021

Call (CRN) 30208 & 30311 | 5.0 Units

Lecture is 100% online

Lab is 100% Online

4 Hours Lecture | 3 Hours Lab per Week

Instructors/Office Hours: **Mary Poffenroth – Asynchronous Lectures**
Monday 11 – 3 PST or by appointment
poffenrothmary@fhda.edu
mpoffenroth@gmail.com

William Webb - Lab Instructor
webbwilliam@fhda.edu
Lab: asynchronous

Division/Dept: Biological Sciences

GE Fulfillment: Area 5B / B2 for CSU/UC Transferable Credit

Online Orientation: <https://foothillcollege.instructure.com/courses/62>

This course has two distinct parts, lecture and lab, that combine to culminate in one final grade. You must attend online with Lecturer Poffenroth via Canvas. Doing well in both is the only way to get a passing final grade. You may not skip one or the other. To do so would result in a failing grade. If you require only lecture or only lab, please choose another course during the add/drop period that will better serve you.

Canvas <https://foothill.instructure.com>

Course materials such as syllabus, handouts, notes, assignment instructions, etc. can be found on Canvas. **You are responsible for regularly checking with the messaging system through Canvas and your email listed with Foothill to learn any updates.** If you have any issues accessing Canvas, you must address these directly with the Foothill HelpDesk – I do not have that level of access to assist you.

Course Description Lecture is fully online. **Lab is also online for Winter 2021.**

Methods of science and basic principles of biology. Special emphasis on genetics, ecology, overpopulation, nutrition and disease prevention.

Please see the schedule at the end of this syllabus. It will have the dates by which the lectures will be available online within our Canvas website. Please note that lectures/activities may be available sooner than the date listed, but not later. **The exam dates are firm.** Since you may complete homework

assignments any time before the deadline, absolutely no late homework will be accepted. For all electronic assignments, do not wait until the last minute to submit. No extensions will be given for user error or unreliable Internet connections.

The Course – Biology 10

Student Learning Outcomes (SLOs)

- 1: Explain the scientific method and demonstrate ability to use this method of study. SLO#1 is assessed with activities in Weeks 1, 2, and 11 plus imbedded questions on the midterm.
- 2: Explain the concept of evolution and the mechanism of natural selection. SLO#2 is assessed in the Lab Presentation and with activities in Weeks 2, 4, 5, 8-10.
- 3: Describe the risk factors and methods of prevention for cardiovascular disease and cancer. SLO#3 is assessed using the Literature Review Paper

Student who complete this course will have the ability to:

- Explain the scientific method and demonstrate its application to problem solving.
- Critically evaluate scientific information.
- Relate methods of science and the role science plays in today's world.
- Describe basic principles and processes common to all forms of life.
- Explain the cell theory and describe the structure and function of cells
- Relate basic nutrition concepts to cell function and disease prevention
- Understand the risk factors associated with cardiovascular disease and cancer
- Describe basic genetic principles unifying past and present life forms.
- Describe human genetic diseases and disorders.
- Describe the evidence that supports the theory of evolution
- Explain the central role of evolution as a theory in biology
- Describe basic ecological principles and relate them to current environmental issues.
- Discuss the importance of each human in preserving, protecting and improving the quality of life for all organisms.
- Use basic laboratory skills to explore topics in biology.
- Use library and internet facilities to explore topics in biology.
- Use basic mathematic, communication and critical thinking skills in the study of biology.

Textbook

OpenStax *Concepts of Biology*. Download for free at <http://cnx.org/contents/b3c1e1d2-839c-42b0-a314-e119a8aafbdd@9.10>.

Lecture

Online in Canvas

About the Lecture Instructor

As a first generation college student myself, I understand the unique challenges of attending college. Over the last ten years, I have constantly adjusted and updated my courses to help reflect the changing technology and the ever evolving student. You will find my courses full of different ways to keep you engaged and prepare you for future success. Many of my students go on to see me again in the biology department at San Jose State University, or secure other four year degrees and many lucrative jobs both within and beyond working with the environment. I take student feedback seriously and work to help you find the balance between a good challenge that will keep you interested and reaching your goals. If you want to learn more about my work in speaking, writing, and publishing – you can check out my portfolio website, <https://www.marypoffenroth.com>

Email for Lecture

poffenrothmary@fhda.edu is my official Foothill email address. It is best to email me any questions or concerns. For email, **I will respond within 48 business hours**. Please do not expect a response late at night or on weekends. Your email must be in grammatically correct English, with proper salutations, in order to receive a response. If you do not receive a response, please send an email to my personal address at mpoffenroth@gmail.com

Lecture Delivery Mode: Online

The lecture portion of the course is delivered online through Canvas (<https://foothill.instructure.com>). Success in the course requires active participation by logging in multiple times a week for updates, to complete assignments, take quizzes, review lectures and participate in discussions. Check out What Makes a Successful Online Student?
<http://www.ion.uillinois.edu/resources/tutorials/pedagogy/studentprofile.asp>

Do not submit your assignments via a smartphone. You should always use a laptop or desktop computer to perform your work. We do a lot of online/web based work in this class. Please make sure you have **reliable wifi** and up to date AntiVirus software. Late assignments will not be accepted because of poor internet connection.

This class is not self-paced. But you do have at least one week to submit each unit's assignments any time before the deadline. There is no on-campus requirement. You will have deadlines and they will not be adjusted unless there is an issue that affects the entire class. Online classes, although more convenient for lecture attendance than in-person, are still as rigorous. If you cannot meet the demands and timing of the course, as set forth in the schedule below, please consider taking a different course. **There are no makeups for missed assignments/classes.**

Course material developed by the instructors are the intellectual property of the instructor and cannot be shared publicly without his/her approval.

You may not publicly share or upload instructor-generated material for this course such as exam questions, lecture notes, or homework solutions without instructor consent.

Technology Requirements

This is a technology heavy class since it is in the online environment. You must have a computer that has the most up to date operating system, Microsoft office, up to date web browser and associated media players, a webcam, microphone and earphone capabilities. There are computers available on campus, but you will need to search this resource out for yourself if needed.

You must also have the necessary system requirements to smoothly run Canvas. It is your responsibility in an online class to ensure you have the proper technology to view the online curriculum. I cannot provide tech support for your system or software. If you find a video or something is not playing properly, try a different web browser (i.e. instead of safari try to play it in FireFox or Chrome). This usually solves the issue.

You are automatically registered with Canvas as a registered student of the course. Only registered students can access our Canvas class. I will also be sending out emails through MyPortal periodically. Please ensure you are reading/receiving them.

Course Requirements and Assignments

Classes are designed such that in order to be successful, it is expected that students will spend a minimum of forty-five hours for each unit of credit (normally three hours per unit per week), including preparing for class, participating in course activities, completing assignments, and so on. This is a standard set by Foothill College.

Course Point Breakdown

1. Midterm Exam	100
2. Final Exam	100
3. Weekly Lecture Activities (Online, Submitted to Canvas) <i>up to</i>	300
4. Literature Review Paper	100
5. Lab Activities (25 points each)	200

Total Points for Quarter 800

1 & 2: Midterm and Final Exams

Each exam may consist of multiple choice, short answer and/or essay. Each exam will be timed and you will be required to complete each online exam beginning at 12:01 am and must be finished before 11:59 pm PST on the exam dates listed in the schedule below. The final exam is not cumulative. **Exam material will be based on lecture videos, labs, homework, readings, course activities.** Exams are open note BUT timed. You must study for your exams! Do not rely solely on your notes to answer questions, you will run out of time and will not complete the exam. Any questions not answered will receive a zero. You will only get credit for those questions you answer correctly. No makeup exams and no study guide.

3. Weekly Lecture Activities will be submitted to Canvas which uses Turnitin.com technology:

Only .doc, .docx, or .pdf file types are accepted. Any other files types (such as pages or links) are not readable by Canvas and will receive a zero grade with no opportunity to make up.

Turnitin.com is a website that checks for plagiarism and allows for online grading by the instructor. No hard copies are needed in class for assignments. Ensure you post your assignment to the correct folder within turnitin.com. No late assignments will be accepted and you can submit your assignment anytime before the due date.

Turnitin.com is also a software program that allows your papers to be graded online and will scan all publications to check for how much your paper matches other sources, including other student's papers. Since I can see exactly which parts of your paper are similar to a resource, I make the final determination whether or not I feel plagiarism has occurred. It is of the utmost importance that you do all your own work. **Do not submit anything that is not your own writing, it will be caught and you will be held accountable.**

4. Literature Review Paper (100 points)

This will be a literature review paper based upon your research in the peer-reviewed journals. You will need to utilize *Write, Present, Create: Science Communication for Undergraduates* for assistance in completing this in a scientific journal style and tone. More detailed information about this assignment can be found in a separate document. You can submit this assignment any time before the due date. You have only one chance to do well on this assignment. If you do not do well, there are zero opportunities for a makeup, second chance, or "do-over".

5. Lab Activities: Please see the lab syllabus provided by the instructor

Grades

Course Grade: Lecture and Lab Scores Combine for One Final Grade

The percentage earned out of **800** points determines the semester grade – Grades will NOT be Curved. You will have one week from the posting of each grade update to address any concerns/mistakes with your instructor. After this one week, grades will become permanent and unchangeable. It is YOUR responsibility to ensure your grade is correct weekly. Incorrect grade change requests at the end of the semester will absolutely not be honored. **The master grade book will be housed securely in your Canvas account for all assignments.**

Grade Discrepancies

If you notice a grade discrepancy on grade updates posted on Canvas , you have exactly two weeks from that posting to contact me to resolve any issue. After that, your score will become permanent.

Letter grades (with +/-) will be determined using the following scale (standard rounding rules apply where .1-.49 is rounded down, .5-.99 is rounded up):

%	%	%
A+ = 98 - 100		
A = 92-97	B- = 80-81	D+ = 60-67
A- = 90-91	C+ = 78-79	D = 57-59
B+ = 88-89	C = 68-77	D- = 54-56
B = 82-87		F = < 53.9

Missed Exams and Late Assignments

Exams cannot be made up. If there is a verifiable emergency that prevents you from taking your online exam, contact me immediately via email with the details of your emergency and we will go from there. Generally, for those students that have a verifiable emergency you will receive the average of your other exam in lieu of your one missed exam. If you do not have a verifiable/documented emergency then you will receive the average of your other exam minus a 20% penalty. These score will be inputted at the end of the semester.

Incompletes

Incompletes are permitted only if a student is in good standing (has a passing grade), has completed at least two-thirds of the course, and has a verifiable serious and compelling reason to take an incomplete. An incomplete is not given due to poor performance.

Dropping and Adding

Students are responsible for understanding the policies and procedures about add/drop, grade forgiveness, etc. Students are responsible for dropping themselves before deadlines set forth by Foothill College.

Academic integrity

Instances of academic dishonesty will not be tolerated. Cheating on exams or plagiarism (presenting the work of another as your own, or the use of another person's ideas without giving proper credit) will result in a failing grade and sanctions by the College. For this class, all assignments are to be completed by the individual student unless otherwise specified. If you would like to include your assignment or any material you have submitted, or plan to submit for another class, please note it requires approval of instructors. You are responsible for knowing the College Policy on Academic Dishonesty outlined in the College Catalog. Any student found plagiarizing *any* essay or assignment in ESCI191 will receive an automatic failing grade (F) on the essay or assignment, may receive a failing grade in ESCI191 and will be referred to the Judicial Affairs office. Plagiarism includes copying phrases, sentences, key words, parts or all of another's writing, including papers or articles published on the Internet, newspapers, magazines, books, journals, or any other medium, including the writing of your fellow students from current and/or previous classes. All phrases, key words, sentences, or larger sections of writings taken from an outside source and used in a student's paper should be appropriately reworded by the student AND cited. Drawing as few as five consecutive words from another's writings will be considered plagiarism, as can improper paraphrasing. All ideas or concepts drawn from another's work should be properly cited. NOTE: A student who shows or lends to their classmates their own work is at risk of being an accessory to plagiarism and, if their work is copied, will suffer the same consequences as the student who plagiarizes (see section 1.1.6 of the Definition of Academic Dishonesty). **This policy also applies to students in previous courses who show or lend their work to current students.**

General Expectations, Rights and Responsibilities of the Student

As members of the academic community, students accept both the rights and responsibilities incumbent upon all members of the institution. Students are encouraged to familiarize themselves with Foothill's policies and practices pertaining to the procedures to follow if and when questions or concerns about a class arises. In general, it is recommended that students begin by seeking clarification or discussing concerns with their instructor. If such conversation is not possible, or if it does not serve to address the issue, it is recommended that the student contact the Department Chair as a next step.

Campus Policy in Compliance with the American Disabilities Act

If you need course adaptations or accommodations because of a disability, or if you need to make special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Presidential Directive 97-03 requires that students with disabilities requesting accommodations must register with the Accessible Education Center (formerly the DRC).

Campus Policy on Consent for Recording and Sharing of Instructor Materials

Common courtesy and professional standards dictate that you notify someone when you are recording him/her. You must obtain the instructor's (or guest speaker's) permission to make audio or video recordings in this class. All recordings are the intellectual property of the instructor (or guest speaker); you have not been given any rights to reproduce or distribute the material. Course materials developed

by the instructor (or guest speaker) are the intellectual property of the instructor (or guest speaker), as well, and cannot be shared publicly without his/her written approval. Overall, you may not publicly share or upload instructor-generated material for this course such as exam questions, lecture notes, or homework solutions without formal instructor consent. Such permission allows the recordings and materials to be used for your private study purposes only.

Schedule

Plan to complete and submit assignments every week. Assignments and lectures will be posted no later than Sunday evening of each workweek.

******Schedule is on the next page******

Biology 10 Schedule | Winter 2021 | Foothill College

Week #	Dates	Lecture Topics/ Special Due Dates	Canvas Lecture Work Due By 11:59 pm PST Fridays
1	Jan 4 - 9	Scientific Method Diversity in Science Research skills	Jan 8
2	Jan 11 - 16	Biological Diversity Evolution & Natural Selection	Jan 15
3	Jan 18 - 23	Domains of Life Domain Eukarya Kingdom Animalia	Jan 22
4	Jan 25 - 30	Plant & Animal Cell Structure Microorganisms : Domain Eukarya	Jan 29
5	Feb 1 - 6	Microorganisms : Domain Archaea & Domain Bacteria	Feb 5
6	Feb 8 - 13	Cellular Respiration Midterm Exam on Feb 12	Feb 12
7	Feb 15 - 20	Kingdom Plantae	Feb 19
8	Feb 22 - 27	DNA: The Molecule of Life Cellular Reproduction	Feb 26
9	Mar 1 – 6	Patterns of Inheritance DNA Technology	Mar 5
10	Mar 8 - 13	Literature Review Paper Due March 12	Mar 12
11	Mar 15 - 20	Communities & Ecosystems Kingdom Fungi	Mar 19
Final Day	Mar 22	Final Exam: in Canvas. Start and finish the exam between 12:01 am – 11:59	Mar 22

Expanded Topics Covered By Lecture Week & Lab

Scientific Method: Weeks 1 & 2; Labs 1 & 3

Attributes of science
Steps in the scientific method
Inductive and deductive reasoning
Importance of controls, repeatability and peer review
Limits to the scientific method

Basic Biological Concepts: Weeks 1-5, 7, 10 ; Labs

Characteristics common to all life forms
Importance of evolution as a central theory in biology
Hierarchical levels of organization in nature
Binomial nomenclature and taxonomy
Domains, Kingdoms, Classification of human beings

Important Elements and Molecules – Week 1, 8 & 9, Labs 4 & 8

The elements of life (CHNOPS)
Water, Macromolecules of life
Carbohydrates, Lipids, Proteins
Nucleic Acids, Organic Molecules

Cells: Weeks 3, 4 & 8 / Lab 4 & 5

Characteristics common to all cells
Cell theory , Possible origin(s)
Prokaryotes and eukaryotes, Plasma membrane
Fluid Mosaic theory, Transport mechanisms
Eukaryotic organelles and functions

Energy Metabolism and Homeostasis: Weeks 1,6, Lab 5

Definitions of energy, work and calories
Conservation of matter, Conservation of energy

Cellular Functions: Week 4 & 6 / Lab 4 & 5

Synthesis and hydrolysis
Activation energy, enzymes, ATP
Cellular respiration, Glycolysis, Citric acid cycle
Oxidative phosphorylation

Photosynthesis: Week 11 / Lab 7

Light reaction
Calvin cycle, Environmental issues
Comparing C3, C4 and CAM plants (from the perspective of xeric adaptations)
Global warming, Ozone depletion

Molecular genetics: Weeks 8 & 9 / Lab 8

History, research and discoveries
DNA structure and reproduction
Protein synthesis: RNA, transcription, and translation

Reproduction: Week 3, Lab 4

Cell cycle - interphase, mitosis and cytokinesis
Sexual reproduction and meiosis
Human gametogenesis

Inheritance: Week 9 & Lab 8

Phenotype as controlled by genotype
Mendelian Principles
Nonmendelian inheritance
Sex-linked and sex influenced characteristics
Incomplete and codominance
Multifactorial inheritance
Chromosome abnormalities
Human Genome Project
Allele frequencies in different cultures

Mutations and cancer: Literature Review Paper

Basic definitions - tumor, benign, malignant, metastasis
Carcinogens
Tumor suppressor genes, oncogenes and p53
Cancer's warning signals and safeguards

Evolution: Weeks 2, 7-9 / Lab 2

Historical perspective
Central theory in the study of biology
Evidence for evolution
Microevolution and macroevolution
Coevolution

Ecology: Weeks 2, 4, 7, 10 & 11 / Labs 2, 7 & 9

Populations
Human population growth: history and prospects for the future
Communities
Ecosystems
Biosphere
Environmental issues and global concerns