



Basic Course Information

Semester:	Fall 2024	Instructor Name:	Peggy Brady
Course Title & #:	Principles of Biological Sciences – BIOL 100	Email:	peggy.brady@imperial.edu
CRN #:	20956	Webpage (optional):	Canvas
Classroom:	2717	Office #:	2777
Class Dates:	2/12/24 – 06/07/24	Drop- in Hours:	M: 9-10 am T: 11:30 -12:30 pm, W: 3-4 pm Th: 11:30-12:30 pm
Class Days:	M/W	Office Phone #:	760-355-6202
Class Times:	11:20 am – 2:30 pm	Emergency Contact:	peggy.brady@imperial.edu
Units:	4	Class Format/Modality:	Face-to-Face (On Ground)

Course Description

A comprehensive one semester general biology course for non-majors. Includes life from the molecular to the organismic level of both plants and animals and their interactions within the environment. Special emphasis is put on human biology within appropriate areas of study. Appropriate for general education as well as nursing, pre-professional, and higher level biology courses. Includes laboratory component. (CSU) (UC credit limited. See a counselor.)

Course Prerequisite(s) and/or Corequisite(s)

Successful completion of Intermediate Algebra or appropriate placement as defined by AB 705.

Student Learning Outcomes

Upon course completion, the successful student will have acquired new skills, knowledge, and or attitudes as demonstrated by being able to:

1. Demonstrate an understanding of the steps of the scientific method.
2. Demonstrate an understanding of the basis of evolution.

Course Objectives

Upon satisfactory completion of the course, students will be able to:

1. identify the basic characteristics of all living things.
2. name basic chemical aspects that pertain to life and the concept of homeostasis.
3. describe the subcellular components of the cell including their structure and function.
4. explain the light and dark reactions of photosynthesis.
5. explain cellular respiration and its relations to the entire organism.
6. demonstrate knowledge of the structure and function of DNA and RNA.
7. explain protein synthesis and site the central dogma of cell biology.
8. compare and contrast the fundamentals of asexual and sexual reproduction.
9. define ecology and the overall impact of ecology to conditions in the environment.
10. solve problems in general genetics and in human genetics and relate advances in genetics to social responsibility of geneticists.



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11. identify and relate the functions of the major systems of the human body; the interrelationship among body systems and nature of disease.
12. classify organisms in the kingdoms of plants and animals, discuss their evolutions and their relationships.

Textbooks & Other Resources or Links

This class has two required books and requires lab safety goggles.

For Lab:

LAB MANUAL TO ACCOMPANY BIOLOGY (CUSTOM IVC)

ISBN: 9781307871074

Author: Villalobos

Publisher: MCGRAW HILL (CUSTOM PUBLISHING)

This book is for sale at the IVC Bookstore. You will need a copy before your first lab.

Lab Goggles (for dissection lab)

Product # MMS011799053/0

Available at the IVC Bookstore

For Class:

Good news: your textbook for this class is available for free online! If you prefer, you can also get a print version at a very low cost.

Your book is available in web view and PDF for free. You can also choose to purchase on iBooks or get a print version via the campus bookstore or from OpenStax on Amazon.com.

You can use whichever formats you want. Web view is recommended -- the responsive design works seamlessly on any device. If you buy on Amazon, make sure you use the link on your book page on openstax.org so you get the official OpenStax print version. (Simple printouts sold by third parties on Amazon are not verifiable and not as high-quality.)

Concepts of Biology from OpenStax, Print ISBN 1938168119, Digital ISBN 1947172034,

www.openstax.org/details/concepts-biology

There are additional student resources available for this book as well and can be found on website listed above under "student resources".

Course Requirements and Instructional Methods

Class activities: This class will utilize lectures, videos, discussions, and other activities to aid your learning. You are expected to come to class having looked over the materials presented in the textbook. This will help you engage during the class. You have an obligation to the others in the class to participate in creating an excellent learning environment in our classroom.

Examples of learning activities you may see:

- Discussion of Questions/Videos/Other media
- Poll Questions using Poll Everywhere



- Case Studies
- Student led discussions of assigned topics
- Writing activities
- Brainstorming
- And Many More!

Lecture Exams: There will be 4 Lecture exams worth 100 points each (400 points total). Exams will happen at the end of class. Each exam will be given 70 minutes for completion. These exams can include multiple choice, short answer, true/false, matching, and fill in the blank questions. You may be asked to read a passage and provide analysis based on your scientific understanding of the field. Figures from lecture and/or the textbook may appear. Be sure to bring a few writing utensils. Exams must be submitted in pen if the student wishes to request a regrade on a question.

Lab Exams: There will be 2 lab exams worth 100 points each (200 points total). These will happen during the laboratory time. You will have the entire time to complete the exam, but you may not need the entire lab period. These exams can include multiple choice, short answer, true/false, fill in the blank, and practical (application) questions. For some questions you may need to complete a task (such as take measurements) to answer the question.

There will be no makeup exams, except for extreme circumstances (ex. illness, emergency). If you have a valid and documentable reason for missing an exam it is your responsibility to inform me (the instructor) within 48 hours of the missed exam and provide documentation for the day of the exam. This must be done by email. Exceptions to this 48 hour timeline will only be allowed in cases where the student was incapacitated for this time (ex. Hospitalization). Without this you will be unable to make up the exam and will a grade of 0 will be entered into the gradebook. The makeup exam will be scheduled as soon as reasonably possible, typically within 1 week of the original exam. Failure to show up for the makeup will be treated the same way as missing the original exam day.

Lab worksheets: There will be 12 lab worksheets worth 25 points each (300 points total). Lab worksheets are due at the end of lab. Your lab group will be responsible for submitting your worksheet every week. You are responsible for making sure everyone's name is on the worksheet. Students must stay in lab until everyone in their lab group has completed the entire lab. Leaving before your lab group is done will result in a 0 for that lab assignment. The lab groups must also clean their lab area before leaving to receive full points for their lab assignments (up to 20% of points for the entire assignment can be deducted if the group leaves a messy lab station). These assignments cannot be made up because lab rooms are set up only for the day of the lab. Students may have one missed lab excused without documentation. Additional missed labs will require valid documentation to be excused from the assignment. This documentation must be provided by email within 48 hours of the missed lab. Exceptions to this 48 hour timeline will only be allowed in cases where the student was incapacitated for this time (ex. Hospitalization).

Mini project: There will be 1 mini project worth 50 points. This project will be assigned and completed during lab. See schedule.

Participation Self-Assessments: There will be 5 self-assessments worth 10 points each (50 points total). These will be due every few weeks. They will be online and will be submitted through Canvas. Please be honest when filling out the assessments.

Spelling and grammar (within reason) count on all written assignments. If spelling or grammar impede my ability to understand your answer you will lose points.

Extra Credit: I often give extra credit in the form bonus questions on exams. These are never guaranteed. If I choose to do so, everyone will receive the same opportunities to earn the extra points.

Late Work: I do not accept late work without documentation.

Course Grading Based on Course Objectives

- 4 class exams - 100 points each
- 2 lab exams - 100 points each



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1 mini project - 50 points
12 Lab worksheets - 25 points each
5 participation self-assessments - 10 points each
Total: 1000 points

Grade Breakdown:

- A 900 - 1000 points
- B 800 - 899 points
- C 700 - 799 points
- D 600 - 699 points
- F 0 - 599 points

Should I feel a grade adjustment is called for based upon the distribution of point totals across the entire class, I will adjust this grading scheme. However, anyone receiving $\geq 90\%$ of all points is guaranteed at least an A, $\geq 80\%$ of all points at least a B, and $\geq 70\%$ of all points at least a C. The grade cutoffs might fall below these levels but will not be raised above them.

At the end of the term many students tend to email me asking me to round their grade. Decisions on grade adjustments, as per the policy above, are done once I can see the distribution of grades for the entire class. If any adjustments are made, they will be applied to all students in the course. Emailing me will not change your final grade. Because of this, I ask that you please refrain from emailing about grade adjustments.

Academic Honesty (Artificial Intelligence -AI)

IVC values critical thinking and communication skills and considers academic integrity essential to learning. Using AI tools as a replacement for your own thinking, writing, or quantitative reasoning goes against both our mission and academic honesty policy and will be considered academic dishonesty, or plagiarism unless you have been instructed to do so by your instructor. In case of any uncertainty regarding the ethical use of AI tools, students are encouraged to reach out to their instructors for clarification.

Academic honesty in the advancement of knowledge requires that all students and instructors respect the integrity of one another's work and recognize the important of acknowledging and safeguarding intellectual property.

There are many different forms of academic dishonesty. The following kinds of honesty violations and their definitions are not meant to be exhaustive. Rather, they are intended to serve as examples of unacceptable academic conduct.

- Plagiarism is taking and presenting as one's own the writings or ideas of others, without citing the source. You should understand the concept of plagiarism and keep it in mind when taking exams and preparing written materials. If you do not understand how to "cite a source" correctly, you must ask for help.
- Cheating is defined as fraud, deceit, or dishonesty in an academic assignment, or using or attempting to use materials, or assisting others in using materials that are prohibited or inappropriate in the context of the academic assignment in question.
- Reusing work submitted in previous courses. I expect all work done in my courses to be original work on the student. A student is not permitted to reuse work done in previous courses (whether done in another course entirely or if the student is retaking this course).

Anyone caught cheating or plagiarizing will receive a zero (0) on the exam or assignment, and the instructor may report the incident to the Campus Disciplinary Officer, who may place related documentation in a file. Repeated acts of cheating may result in an F in the course and/or disciplinary action. Please refer to the



[General Catalog](#) for more information on academic dishonesty or other misconduct. Acts of cheating include, but are not limited to, the following: (a) plagiarism; (b) copying or attempting to copy from others during an examination or on an assignment; (c) communicating test information with another person during an examination; (d) allowing others to do an assignment or portion of an assignment; (e) using a commercial term paper service (f) using work from a previous course and submitting it for credit.

Course Policies

Attendance:

- A student who fails to attend the first meeting of a class or does not complete the first mandatory activity of an online class will be dropped by the instructor as of the first official meeting of that class. Should readmission be desired, the student's status will be the same as that of any other student who desires to add a class. It is the student's responsibility to drop or officially withdraw from the class. See the [General Catalog](#) for details.
- Regular attendance in all classes is expected of all students. A student whose continuous, unexcused absences exceed the number of hours the class is scheduled to meet per week may be dropped. For online courses, students who fail to complete required activities for two consecutive weeks may be considered to have excessive absences and may be dropped.
- Absences attributed to the representation of the college at officially approved events (conferences, contests, and field trips) will be counted as 'excused' absences.

Classroom Etiquette:

It is everyone's responsibility to create a fair, welcoming, productive, and collaborative learning environment. It falls on each of us to make sure the learning environment of our classroom is free from unnecessary distractions, personal attacks, and other disrespectful behavior. It is in your best interests and in the best interests of your fellow classmates to engage in each lesson to help us all achieve the learning goals set forth in the syllabus. Distracting and/or inappropriate behavior will be met with a warning and, if continued, will result in you being asked to leave the classroom until you are ready to engage with the material again.

Classroom Rules:

- No food or drink allowed during lab periods.
- Cell phones must be on silent and put away during the entire class period. Failure to do so will result in you being asked to leave. Cell phones are a distraction to you, me, and the other students in the class. If you need to take or make a call, please get up and return to class when you are done.
- No talking during lecture or other presentation portions of the class. It is distracting to everyone. If you have a question please raise your hand and I will happily address it. Students who continue to disrupt class after a warning will be asked to leave. Disciplinary procedures will be followed as outlined in the General Catalog.
- Due to college rules, no one who is not enrolled in the class may attend.

Additional Lab Safety Requirements:

Absolutely no food or drink (including water). If you need to drink water or eat you may step out and rejoin the class when you are done.

Wear closed toe shoes and other protective clothing. This is for your own safety.

Some labs will require safety goggles for your protection. You will need to provide your own goggles.

Email Policy:



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I will respond to emails within 1 business day. If a full business day has passed, send a follow-up email. Saturdays and Sundays are not business days. I do try to answer emails on the weekend, but I cannot guarantee them.

Tips to Help you Succeed!

1. Make sure you come on time to all lectures and labs! Arriving late or missing a class for any reason (excused or unexcused) can cause you to miss lecture and lab material, and will only put you at a disadvantage in this class.
2. Make sure you know what will be happening each day for class! Keep the class schedule handy.
3. Skim through or read the chapter before coming to lecture, and lab activities before coming to lab. You will have a general feel for the subject matter, which will help your understanding of the material during lecture. You will also be more prepared to do the lab activity, and you can perform it better, quicker, and will be able to easily understand what is happening in the lab.
4. Pay attention during lectures! I will say things during lecture that are not written on the PowerPoint slides or the board that will be on the exams. Make sure you take good notes during class. Don't just mindlessly write down word-for-word what is on the slides.
Listen to what I have to say, and take notes on that also!
5. Study, study, study! I will not attempt to tell you how much time you need to set aside for studying, as different students will require different amounts of time to meet their goals. Ideally, you should study in an area where there are no distractions (television, radio, computers, iPods, other people, etc.). However, you should also spend time studying in groups. Nothing makes you learn the material better than having to explain it to someone else!
6. Don't cram! It's better to spend some time each week studying as compared to saving it all until the night before the exam (research really backs this up).
7. It is not enough just to memorize facts! On the exams, you will be responsible for using the information learned and applying it to new situations. You need to understand what these facts mean!

IVC Student Resources

IVC wants you to be successful in all aspects of your education. For help, resources, services, and an explanation of policies, visit <http://www.imperial.edu/studentresources> or click the heart icon in Canvas.

If you are experiencing illness (physical or mental) the health center is here for you! They can be found here:

<https://www.imperial.edu/student-support/student-health-center/>

Notes from the health center are one form of documentation accepted for excused absences. Remember they must excuse you from the day you missed the exam/lab to be accepted.

Anticipated Class Schedule/Calendar

Week	Lecture Topic & Associated Textbook Reading	Lab Topic and Associated Lab Manual text
Week 1 Feb 12-16	Course Orientation; What is the scientific method? Chapter 2: Chemistry of Life	Lab Safety; Chapter 1 Introduction to Lab and Metrics; Chapter 2.1
Week 2 Feb 19-23	Holiday – No class	Chemical Composition of Cells; Chapter 3.1-3.3
Week 3 Feb 26 – March 1	Chapter 1. The Scientific Study of Life Chapter 3: Cell Structure and Function Review for Exam 1 (if time permits)	Microscopy; Chapter 2.3 – 2.5



Week	Lecture Topic & Associated Textbook Reading	Lab Topic and Associated Lab Manual text
	Participation Self-Assessment 1 Due Tuesday by 11:59 pm	
Week 4 March 4-8	Chapter 4.1: Introduction to Energy and Enzymes Lecture Exam 1 (Weeks 1-3)	Cell Structure and Function; Chapter 4.3-4.4
Week 5 March 11-15	Chapter 5: Photosynthesis	Enzymes; Chapter 5.1-5.3
Week 6 March 18-22	Chapter 4.2-4.4: Respiration and Fermentation Participation Self-Assessment 2 Due Tuesday by 11:59 pm	Photosynthesis; Chapter 6.2
Week 7 March 25-29	Chapter 16.2-16.3: Digestive system, Circulation and Respiration Chapter 16.5: Musculoskeletal System Review for Exam 2 (time permitting)	Cellular Respiration; Chapter 7.2
Spring Break	NO CLASS	No class
Week 8 April 8-12	Chapter 16.6 : Nervous System Lecture Exam 2 (Weeks 4-7)	Lab Exam 1 (Weeks 1-7)
Week 9 April 15-19	Chapter 6: Reproduction at the cellular level Participation Self-Assessment 3 Due Tuesday by 11:59 pm	Frog Dissection; Chapter 25.3 THIS LAB REQUIRES SAFETY GOGGLES/GLASSES
Week 10 April 22-26	Chapter 7: Cellular Basis of Inheritance	Mitosis/Cellular Reproduction 8.1-8.3
Week 11 April 29–May 3	Chapter 9 & 10: Molecular Biology and Biotechnology	Senses; Chapter 31.2-31.4
Week 12 May 6-10	Chapter 11: Evolution and its Processes Lecture Exam 3 (Weeks 8-11) Participation Self-Assessment 4 Due Tuesday by 11:59 pm	DNA Biology 12.1-12.3
Week 13 May 13-17	Chapter 14: Plant Diversity Chapter: 15 Animal Diversity	Mini project: Science writing and the scientific method
Week 14 May 20-24	Chapter 19 & 20: Population and Community Ecology; Ecosystems and the Biosphere	Plant Exploration 18.1-18.4
Week 15 May 27-31	Holiday – No Class Participation Self-Assessment 5 Due Tuesday by 11:59 pm	Review for Final Exams
Week 16 June 3-7	Lecture Exam 4 (Weeks 12-15)	Lab Exam 2 (Weeks 9-15)

Subject to change without prior notice

Instructor Introduction

Hello! It's so wonderful to meet you! I know sometimes instructors can seem intimidating so I want to take some space to introduce myself and showcase that I'm just another person you will be interacting with.

My name is Peggy. You can call me Peggy, Dr. Brady, Professor Brady, Dr. Peggy, Professor Peggy, whichever of these you are most comfortable with! It has been my privilege to be involved in undergraduate education for the last 6 years. During my time in graduate school, I've been involved in classes ranging from general biology to disease ecology from systematics to comparative anatomy! I studied at UC Santa Cruz where I received my Bachelor of Science degree in General Biology. After that, I attended CSU Sacramento and obtained a Master of Science degree in Ecology, Evolution, and Conservation Biology. It was at CSU Sacramento that I developed a love for teaching science. Finally, I attended UC Riverside where I earned a PhD in Evolution, Ecology, and Organismal Biology. Over my time in graduate school, I've conducted research centered on kin selection in fruit flies and mammalian phylogenetics. I'm happy to discuss any of these experiences with you or answer questions you may have about higher education in biology. My office hours are a great time for these kinds of questions. I'm looking forward to meeting all of you soon!



This is a picture of me standing next to Max Mastodon! Max is a Pacific Mastodon who is typically on display at the Western Science Center in Hemet CA. He has his own twitter page @MaxMastodon if you want to learn more about this fossil!