

Basic Course Information

| | | | |
|-------------------|--|---------------------|--|
| Semester: | Winter 2025 | Instructor Name: | Dr. Daniel Gilison |
| Course Title & #: | Principles of Biological Science – BIOL 100 | Email: | daniel.gilison@imperial.edu |
| CRN #: | 15055 | Webpage (optional): | https://imperial.instructure.com/ |
| Classroom: | 2711 | Office #: | 2770 |
| Class Dates: | 1/2 – 2/3 | Office Hours: | N/A |
| Class Days: | MTWRF | Office Phone #: | (760) 355-5759 |
| Class Times: | 3:00-5:15 PM | Emergency Contact: | (760) 355-5759 or daniel.gilison@imperial.edu |
| Units: | 4 | Class Format: | Hybrid |

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 AB705.

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.
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

- Fowler, S., Roush, R., and Wise, J. (2022) [Concepts of Biology](#). Rice University. ISBN: 9787947172036
- Mader, Sylvia S. (2022). *Laboratory Manual to accompany Biology 14th edition, Custom Edition* (14th/e). New York, NY McGraw-Hill. ISBN: 9781266244476

Course Requirements and Instructional Methods

- There will be **4 exams**, worth **100 points** each (**400 points** total). Exams will last 60 minutes, and will consist of 50 multiple choice questions dealing with lecture material. Figures from the lectures and textbook will appear on the exams.
- There will be **1 lab exam**, worth **100 points**. This lab exam will cover all lab activities during the course. For this exam, you will view some results or other aspects from the lab and then answer questions about them.
- There will be **11 lab worksheets** worth **11 points** each (**110 points** total). Lab worksheets are due at the end of each lab.
- There will be **20 on-line** homework assignments worth **10 points** each (**200 points** total). Homework will be due on the date in the schedule listed at 11:59 PM. Homework cannot be made up, except for extreme circumstances.
- There will be **4 on-line** review quizzes for extra credit and they will be due on the date in the schedule listed at 11:59 PM.
- There will be extra credit available on some assignments.
- There will be no make-up assignments, except for extreme circumstances. If you have a valid, documented reason for missing an assignment, it is **your responsibility** to tell me about it and provide valid documentation **as soon as possible (preferably BEFORE it is due)**, otherwise you will not have the opportunity to make it up, and will be given a **zero** for it. Work issues, family issues, or forgetting to turn in assignments do not count as valid excuses.

Course Grading Based on Course Objectives

| | | | |
|-------------------------|-------------------|--------------|------------------|
| 4 Exams | 400 points | Grade | Points |
| 1 Lab exam | 100 points | A (90%+) | 729 - 810 points |
| 11 lab worksheets | 110 points | B (80-89.9%) | 648 - 728 points |
| 20 homework assignments | 200 points | C (70-79.9%) | 567 - 647 points |
| Total | 810 points | D (60-69.9%) | 486 - 566 points |
| | | F (0-59.9%) | 0 - 485 points |

Academic Honesty (Artificial Intelligence - AI)

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.

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.

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.

Course Attendance Policies

- 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.
- The deadline for dropping a course without appearing on transcript is **Wednesday, January 8**.
- The deadline for dropping a full-term class is **Saturday, January 25**.

Additional Help

1. Make sure you watch all lectures! Not watching the lecture videos, or just skipping through them, can cause you to miss lecture 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 watching the lectures, and lab activities before performing the labs. You will have a general feel for the subject matter, which will help your understanding of the material during lecture. You will also 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 that will be on the exams. Make sure you take good notes during lecture. 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! You should spend at least 2 hours studying for this class each day. You should study in an area where there are no distractions (television, radio, computers, music, other people, etc.). However, you should also spend time studying with other students (online, of course!). Nothing makes you learn the material better than having to explain it to someone else!
6. Spend time doing the online homework! It is there to help you learn the material, so not doing it, or waiting until the due date to start the homework will only hurt your grade in the class.
7. Don't cram! It is better to spend some time each day studying as compared to saving it all until the night before the exam.
8. 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!

HYBRID CLASSES:

1. Hybrid classes are typically harder, not easier, for most students. You need to be self-sufficient with studying and keeping up with the material and work needed to be done for the class.
2. I will be sending out constant announcements about when lectures are available and when assignments are due. However, this is not a substitute for reading the syllabus and class schedule.
3. **Check your IVC email** constantly! All announcements and major forms of communication will be sent to it.
4. You need to **watch the full lectures** – and probably multiple times! Don't treat lectures like regular videos that you can just skip through. You need to treat the online lecture videos as if you were really in the classroom listening to the lecture. Not doing so will hurt your grade in this class.
5. Any questions about the course material or anything else about the class? Ask me! DO NOT rely on Google or random websites to get the information. If you are confused about something in the class, your primary resources should be the lecture videos, lecture notes, textbook, and myself.

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.

Anticipated Class Schedule/Calendar

| Day | Lecture | Lab | Online Assignment Due |
|-----------|--|---|--|
| R 1/2 | Introduction to the class Ch. 1 – Introduction to Biology | Introduction to the lab | |
| F 1/3 | Ch. 2 – Chemistry of Life | Metric Measurement Lab | Biology HW due |
| M 1/6 | Ch. 3.1-3 – Cells | Chemical Composition of Cells Lab | Chemistry HW due |
| T 1/7 | Ch. 3.4-5 – Membranes | Microscopy Lab | Cells HW due |
| W 1/8 | Ch. 4.1 – Energy & Enzymes | Cell Structure and Function Lab 1 | Membranes HW due Review Quiz for Exam 1 due |
| R 1/9 | Ch. 6.1-2 – Mitosis | Exam 1 – Ch. 1-3 | |
| F 1/10 | Ch. 7.2-3 – Meiosis | Cell Structure and Function Lab 2 | Energy HW due |
| M 1/13 | Ch. 15.1 –Tissues | Enzymes Lab | Mitosis HW due Meiosis HW due |
| T 1/14 | Ch. 16.3 – Circulation | Cellular Division Lab | Tissues HW due |
| W 1/15 | Ch. 16.3 – Respiration | Fetal Pig Dissection Lab 1 | Circulation HW due |
| R 1/16 | Ch. 16.2 – Digestion | Fetal Pig Dissection Lab 2 | Respiration HW due Review Quiz for Exam 2 due |
| F 1/17 | Ch. 16.1 – Urination Ch. 16.6 – Nervous System | Exam 2 – Ch. 4, 6, 7, 15, 16.3 | |
| M 1/20 | NO CLASS | NO CLASS | |
| T 1/21 | Ch (not in textbook) – Senses | Fetal Pig Dissection Lab 3 | Digestion HW due |
| W 1/22 | Ch. 9.1-2 – DNA | Fetal Pig Dissection Lab 4 | Urination HW due Nervous System HW due |
| R 1/23 | Ch. 9.3-4 – Gene Function | Senses Lab | Senses HW due DNA HW due |
| F 1/24 | Ch. 8 – Genetics | DNA Isolation Lab | Gene Function HW due Review Quiz for Exam 3 due |
| M 1/27 | NO LECTURE | Exam 3 – Ch. 16.1-2, 16.6, Senses, 9 | |
| T 1/28 | Ch. 6.3 – Cancer | Human Genetics Lab | Genetics HW due |
| W 1/29 | Ch. 11.1, 2, 5 – Evolution | HIV Lab | Cancer HW due |
| R 1/30 | Ch. 19.2-3 – Populations | Lab Exam Review | Evolution HW due |
| F 1/31 | NO LECTURE | Lab Exam | Populations HW due Review Quiz for Exam 4 due |
| M 2/3 | NO LECTURE | Exam 4 – Ch. 8, 6, 11, 19 | |