



IMPERIAL VALLEY COLLEGE

BIOL 100 (15009)

Principles of Biological Science

Winter 2015

4 Credits



Instructor: Ms. Susan Moss, Associate Professor of Biology

Office: 2779

Office Phone Number: 760-355-5760

Email: susan.moss@imperial.edu

Lecture: MTWRF 9:00 – 11:10 room 2735

Lab: MTWRF 11:50 – 1:40 room 2717

Textbooks & Other Resources or Links

Required:

► **Textbooks (packaged together, only in bookstore)**

Biology: The Essentials by Mariëlle Hoefnagels, 2013, 1st edition

Biology 100 Lab Manual (Customized)

► **Safety glasses**

Course Prerequisite

MATH 091 or MATH 090 with a grade of "C" or better.

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.

Course Objectives

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

- Identify the basic characteristics of all living things.
- Name basic chemical aspects that pertain to life.
- Explain the concept of homeostasis.
- Describe the subcellular components of the cell including their structure and function.
- Explain the light and dark reactions of photosynthesis.
- Explain cellular respiration and its vital role in maintaining life.
- Explain the primary evolutionary forces that shape living things over time.
- Demonstrate knowledge of the structure and function of DNA and RNA.

- Compare and contrast the fundamentals of asexual and sexual reproduction.
- Describe the importance of ecological principles in maintaining ecosystems.
- Solve problems in human genetics.
- Describe the basic structures and functions of the major systems of the human body.
- Classify organisms in the kingdoms of life.

Student Learning Outcomes

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

- Demonstrate an understanding of the steps of the scientific method.
- Communicate an understanding of the various patterns of inheritance of genetic traits.
- Explain how the processes of natural selection influence evolution.
- Perform lab activities properly and correctly analyze lab data.

Course Requirements and Instructional Methods

This course incorporates both lecture and lab material related to the understanding of biology. There will be exams, quizzes, worksheets, outdoor activities and research projects.

IVC Withdrawal Policy

- ❖ The deadline for dropping a course without it appearing on your transcript is January 11th.
- ❖ The deadline for dropping the course with a “W” is January 29th.

Attendance Policy

- Each lecture & lab is considered a **separate** instructional period.
- Each missed instructional period earns you **1** strike.
- If you reach **8** strikes, you will be dropped from the course.
- **ONLY** absences attributed to the representation of the college at officially approved events (conferences, contests, and field trips) will be counted as “excused” absences. All other absences count against you.

Classroom Rules and Etiquette

- Attendance and punctuality are required. I start on time and expect you to be seated by the time class starts and I begin taking roll. If tardiness becomes a problem, I will start locking out late arrivers.
- Disruptive, disrespectful, inappropriate, or offensive behavior of any kind will not be tolerated and may result in your being dropped from the course.
- As per IVC policy, this course is conducted solely in English. Only English may be spoken when lecture or lab is in session.
- Only voice recorders may be used to record lectures. Videotaping is never allowed.
- During class, if your cell phone starts ringing or you use it for personal reasons like texting, **10 points** will be deducted from your final point total.
- No open food or drink containers are allowed in the classroom or lab.
- Safety glasses must be worn and long hair tied back when dissections/experiments are done in lab.
- Due to college rules and state laws, no one who is not enrolled in the class may attend, including children.

Grading Policies

Questions on exams will be based on lecture notes and lab activities. Everything I go over is fair game on exams. Exams will include multiple-choice, fill-in, T/F, matching and short-answer questions. Tests may also include diagrams to label.

NO Make-up Exams Will Be Given

If you notify me in advance that you have to miss an exam **and** you have a legitimate excuse with supporting documentation, I will prorate the first missed exam. Any other missed exams will receive a zero.

EXAM-TAKING RULES:

- ◆ Long hair must be tied back.
- ◆ No hats or hoods may be worn.
- ◆ Hands must remain on top of the table.
- ◆ Test pages must be folded under when you turn a page.
- ◆ For matching & labeling, **capital** letters must be used.
- ◆ Black pen must be used for labeling.

Spelling

You do not get full credit for knowing a term or structure if you cannot spell it correctly.

Thus, spelling of structures and terms counts on ALL exams. Correct spelling also means writing your letters clearly and properly. The penalty for each spelling error is ½ point.

Grade Calculation

Test scores that end up in the middle of two numbers will be rounded **down**. Final grades are calculated using a simple point system. If your test average is $\geq 70.0\%$, your grade will be based on the total points you earn divided by the total points possible. The grading scale will be:

- A $\geq 90\%$
- B = 80-89 %
- C = 70-79 %
- D = 60-69 %
- F $\leq 59\%$

- ◆ Exams: 100 or more points each
- ◆ Lab assignments: 10-15 pts each
- ◆ Oral presentation: 25 pts
- ◆ Participation, class conduct, misc.: 20 pts.

“Participation” means asking questions, contributing thoughts and opinions. In other words, being an active member of the class! You must earn these points!

“Class Conduct” means following class policies & procedures.

- IMPORTANT:**
- If your exam average ends up below 60%, you will automatically receive an “F” for the course.
 - If your exam average ends up being between 60-69%, you will automatically receive a “D” for the course.

***** If you don't pass the exams, you don't pass the class. *****

Blackboard <https://imperial.blackboard.com/>

PowerPoint slide shows will be available for viewing/printing through your Blackboard account under “Modules.” NOTE: The slide shows posted on BB will not be identical to what’s shown in class.

Exam scores will also be posted so that you can keep track of your test average.

Helpful course materials will be posted under “Resources.”

Laboratory – Policies & Procedures

- You will be responsible for conducting yourself properly and safely during lab. This includes: handling materials and equipment carefully, following instructions, wearing safety glasses and keeping hair tied back when doing dissections or experiments, putting items back where you found them, and cleaning your area before leaving.
- Lab work will consist of material taken from the Laboratory Manual and any additional worksheets assigned. Only original pages from the lab manual will be accepted and pages must be in the correct order.
- For computer activities, no more than 2 people may work together.
- For all other activities, no more than 4 people may work together.
- All group members must participate in **all** activities.
- ONE lab report is turned in per group.
- Everyone in a group will receive the same grade.
- Any group member who leaves before the assignment is completed and turned in will receive a **zero** grade.
- Each group member must write his/her **own** name on lab worksheets.
- MISSED LABS CANNOT BE MADE UP.

Oral Presentation – Topics in Biology

You will be required to independently research and present information related to the science of biology. Your presentation should last **6-7 minutes** and a PowerPoint slide show is required. Your topic must receive pre-approval by **5:00pm on January 16th**, or you forfeit the assignment.

Academic Honesty

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.

Additional Student Services

Imperial Valley College offers various services in support of student success. The following are some of the services available for students.

- **Blackboard Support Site.** The Blackboard Support Site provides a variety of support channels available to students 24 hours per day.
- **Learning Services.** There are several learning labs on campus to assist students through the use of computers and tutors. Please consult your Campus Map for the Math Lab; Reading, Writing & Language Labs; and the Study Skills Center.
- **Library Services.** There is more to our library than just books. You have access to tutors in the Study Skills Center, study rooms for small groups, and online access to a wealth of resources.

Disabled Student Programs and Services (DSPS)

Any student with a documented disability who may need educational accommodations should notify the Disabled Student Programs and Services (DSP&S) office as soon as possible. The DSP&S office is located in Building 2100, telephone 760-355-6313. Please contact them if you feel you need to be evaluated for educational accommodations.

Student Counseling and Health Services

Students have counseling and health services available, provided by the pre-paid Student Health Fee.

- **Student Health Center.** A Student Health Nurse is available on campus. In addition, Pioneers Memorial Healthcare District and El Centro Regional Center provide basic health services for students, such as first aid and care for minor illnesses. Contact the IVC Student Health Center at 760-355-6310 in Room 2109 for more information.
- **Mental Health Counseling Services.** Short-term individual, couples, family, and group therapy are provided to currently enrolled students. Contact the IVC Mental Health Counseling Services at 760-355-6196 in Room 2109 for more information.

Student Rights and Responsibilities

Students have the right to experience a positive learning environment and to due process of law. For more information regarding student rights and responsibilities, please refer to the IVC General Catalog.




Information Literacy



Imperial Valley College is dedicated to helping students skillfully discover, evaluate, and use information from all sources. The IVC Library Department provides numerous Information Literacy Tutorials to assist students in this endeavor.

Anticipated Class Schedule

Tentative, subject to change without prior notice

 = Safety glasses required.

| | Lecture 2735 9:00 – 11:10 | Lab 2717 11:50 – 1:40 |
|---------|---|---|
| Jan. 6 | Intro to course | Ch 1: Intro to life/biology |
| Jan. 7 | Science, the scientific method, the placebo effect | CYBER-ED – Biology |
| Jan. 8 | Ch 2: Cell Chemistry Metric System | Lab #3 – Cell Chemistry  |
| Jan. 9 | Ch 3,8: Cell structure Cell division Tissues | Labs #2 and #4 Microscopes Cell structure & Tissues |
| Jan. 12 | Optional: Q&A time in 2717 9:00 – 10:00 | EXAM 1 11:00 – 1:00 Lecture material from previous week |
| Jan. 13 | Ch 7, 12,13: DNA → RNA → Protein Evolution; Natural, Sexual & Artificial Selection | CYBER-ED – Evolution |
| Jan. 14 | Ch 17: Taxonomy – the classification of life Invertebrates & Vertebrates | Dissections:  Crayfish Earthworm |
| Jan. 15 | Taxonomy cont. | Dissection: rat  Human skeleton |
| Jan. 16 | Adaptations; Outside activity <i>Presentation Topic Due</i> | CYBER-ED – Classification |

| | | |
|---|---|--|
| Jan. 20 | Optional: Q&A time in 2717 9:00 – 10:00 | EXAM 2 11:00 – 1:00 Material from lectures of January 13, 14, 15 |
| Jan. 21 | Ch 5, 16, 21, 22: Plants & Photosynthesis | CYBER-ED – Flowering Plants |
| Jan. 22 | Videos on plant adaptations and reproduction | Dissection: Flowers |
| Jan. 23 | Outside plant scavenger hunt | Read & present plant-related research papers |
| | | |
| Jan. 26 | Optional: Q&A time in 2717 9:00 – 10:00 | EXAM 3 11:00 – 1:00 Material from lectures of January 21 and 22 |
| Jan. 27 | Ch 23, 27: Introduction to humans and human organ systems Cardiovascular System | Lab #27.1 - Cardiovascular System Dissection: Heart  |
| Jan. 28 | Ch 24: Human Organ Systems cont. Nervous System & Senses | Nervous System Sensory experiments |
| Jan. 29 Start time: 10 am | Ch 27, 28: Human Organ Systems cont. Digestive & Respiratory Systems | Lab #7.2 – Yeast experiments  |
| Jan. 30 | PRESENTATIONS | PRESENTATIONS cont. |

| | | |
|--------|---|---|
| | | |
| Feb. 2 | Ch 19: Ecology Abiotic factors, biomes, food chains | Owl pellet dissection |
| Feb. 3 | Ch 19,20: Ecology Symbiosis, biodiversity, exotic species | Food webs |
| Feb. 4 | Ch 20: Ecology Environmental issues | CYBER-ED – Human Impacts |
| Feb. 5 | Optional: Q&A time in 2717 9:00 – 10:00 | EXAM 4 11:00 – 1:00 Material from lectures of January 27, 28, 29 |
| Feb. 6 | Optional: Q&A time in 2717 9:00 – 10:00 | EXAM 5 11:00 – 1:00 Material from lectures of February 2, 3, 4 |