

Basic Course Information

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| Semester: | Spring 2019 | Instructor Name: | Dr. Steven Crum |
| Course Title & #: | Principles of Biological Sciences - Biol 100 | Email: | steven.crum@imperial.edu |
| CRN #: | 21102 | Office #: | 2789.1 |
| Classroom: | 2713 | Office Hours: | M, W 4:05 pm to 4:35 pm and T, R 12:50 pm to 1:20 pm or by appointment |
| Class Dates: | February 11 to June 5 | Office Phone #: | 760-355-6438 |
| Class Days: | Monday and Wednesday | | |
| Class Times: | 11:20 AM to 2:30 PM | | |
| Units: | 4 | | |

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)

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

Course Prerequisites: Math 90 or 91 with a grade of "C" or better.

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. (ILO2)

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

- **Required:** *Laboratory Manual Biology*, Sylvia Mader (ISBN-13: 978-1259298516). This manual may be purchased at the campus book store. **The lab manual may also be purchased online, *Laboratory Manual Biology*, Sylvia Mader (ISBN-13: 978-0077226176) or (ISBN-13: 978-1259298516)**
- **Provided:** The text book for this class will be online and provided to you free of charge by following the link: <https://openstax.org/details/concepts-biology>
Print copies of the online textbook are available on the first day of class.

Course Requirements and Instructional Methods

Students will learn to use a microscope to identify various organisms and their parts. They will be able to describe various cellular processes such as photosynthesis, aerobic cellular respiration, enzymatic reactions, mitosis, and meiosis. Students will acquire a general knowledge of genetics and how genetic information is passed to offspring. Students will learn about the origin of life on Earth and how organisms underwent adaptation and evolution to give rise to life as we know it today. Students will learn the functions of the major systems of the human body, and some ways that these systems work cooperatively to maintain critical life functions.

Exams: The course will include four lecture exams, one lab "midterm" exam, one cumulative lecture final, and one cumulative lab final.

In-class assignments and mini-quizzes: All lectures include in-class assignments and mini-quizzes. While you will not be graded on attendance, you will be graded on these in-class activities. These activities provide you with low-stakes opportunities to assess your knowledge and study skills in the course.

Lab assignments: There will be 15 labs throughout the semester. At the end of each class you are responsible for turning in a completed lab worksheet worth eight points each.

Lab mini-quizzes: At the beginning of each lab there will be two question quizzes that are 2 points each. One question will cover material from the previous week's lab and the other will cover the lab introduction of the current week's lab. There will be no lab mini-quiz for the first week lab. The mini-quiz grade will be added to your lab assignment grade (8 points for lab assignment + 2 points for mini-quiz = 10 points total)

Computer-based assignments: Each lecture will require the use of a computer to complete in-class assignments. If you do not have a laptop or tablet one will be provided for you.

Homework: Homework will not be graded, but is a highly recommended study aid. See "Homework Schedule" to see recommended assignments.

Course Grading Based on Course Objectives

| | | |
|-----------------------------------|----------------|-------------------|
| Lecture Exams | 4 x 25 points | 100 points |
| Lecture Final | 1 x 50 points | 50 points |
| Lab Exam | 1 x 15 points | 15 points |
| Lab Final | 1 x 25 points | 25 points |
| In-class assignments/mini-quizzes | 14 x 2 points | 28 points |
| Labs | 14 x 10 points | 140 points |
| Total: | | 358 points |

Grades are assigned using the following percentage cutoffs:

A ≥ 90%; B ≥ 80%; C ≥ 70%; D ≥ 60%; F < 60%

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 [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

- Electronic Devices: Cell phones and electronic devices must be turned off and put away during class, unless otherwise directed by the instructor.
- Food and Drink are prohibited in all classrooms. Water bottles with lids/caps are the only exception. Additional restrictions will apply in labs. Please comply as directed by the instructor.
- Disruptive Students: Students who disrupt or interfere with a class may be sent out of the room and told to meet with the Campus Disciplinary Officer before returning to continue with coursework. Disciplinary procedures will be followed as outlined in the [General Catalog](#).

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. Please speak to your instructor about additional services which may be available.

- **CANVAS Learning Management System.** Canvas is Imperial Valley College's main Learning Management System. To log onto Canvas follow the "Canvas" link under the "Home" menu on Imperial.edu. A 24/7 Canvas Support Hotline is available for students to use: 877-893-9853.
- **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 instructor or 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 provide basic health services for students, such as first

aid and care for minor illnesses. Contact the IVC [Student Health Center](#) at 760-355-6128 in Room 1536 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.

Veteran's Center

The mission of the [IVC Military and Veteran Success Center](#) is to provide a holistic approach to serving military/veteran students on three key areas: 1) Academics, 2) Health and Wellness, and 3) Camaraderie; to serve as a central hub that connects military/veteran students, as well as their families, to campus and community resources. Their goal is to ensure a seamless transition from military to civilian life. The Center is located in Building 600 (Office 624), telephone 760-355-6141.

Extended Opportunity Program and Services (EOPS)

The Extended Opportunity Program and Services (EOPS) offers services such as priority registration, personal/academic counseling, tutoring, book vouchers, and community referrals to qualifying low-income students. EOPS is composed of a group of professionals ready to assist you with the resolution of both academic and personal issues. Our staff is set up to understand the problems of our culturally diverse population and strives to meet student needs that are as diverse as our student population.

Also under the umbrella of EOPS our CARE (Cooperative Agency Resources for Education) Program for single parents is specifically designed to provide support services and assist with the resolution of issues that are particular to this population. Students that are single parents receiving TANF/Cash Aid assistance may qualify for our CARE program, for additional information on CARE please contact Lourdes Mercado, 760-355- 6448, lourdes.mercado@imperial.edu.

EOPS provides additional support and services that may identify with one of the following experiences:

- Current and former foster youth students that were in the foster care system at any point in their lives
- Students experiencing homelessness
- Formerly incarcerated students

To apply for EOPS and for additional information on EOPS services, please contact Alexis Ayala, 760-355-5713, alexis.ayala@imperial.edu.

Student Equity Program

- The Student Equity Program strives to improve Imperial Valley College's success outcomes, particularly for students who have been historically underrepresented and underserved. The college identifies strategies to monitor and address equity issues, making efforts to mitigate any disproportionate impact on student success and achievement. Our institutional data

provides insight surrounding student populations who historically, are not fully represented. Student Equity addresses disparities and/or disproportionate impact in student success across disaggregated student equity groups including gender, ethnicity, disability status, financial need, Veterans, foster youth, homelessness, and formerly incarcerated students. The Student Equity Program provides direct supportive services to empower students experiencing insecurities related to food, housing, transportation, textbooks, and shower access. We recognize that students who struggle meeting their basic needs are also at an academic and economic disadvantage, creating barriers to academic success and wellness. We strive to remove barriers that affect IVC students' access to education, degree and certificate completion, successful completion of developmental math and English courses, and the ability to transfer to a university. Contact: 760.355.5736 or 760.355.5733 Building 100.

- The Student Equity Program also houses IVC's Homeless Liaison, who provides direct services, campus, and community referrals to students experiencing homelessness as defined by the McKinney-Vento Act. Contact: 760.355.5736 Building 100.

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

Lecture topics tentative, subject to change without prior notice. Exams will not change dates.

| Week | Lecture | | | Lab | |
|------|--------------|--|--------------------|-----------------|---|
| | Lecture date | Lecture topic | Textbook Readings | Laboratory date | Laboratory topic |
| 1 | 2/11 | -Intro to Biology | Ch. 1 | 2/13 | Lab Intro and Safety (Lab 1) and begin Chemistry of Life lecture |
| 2 | 2/18 | Holiday no lecture | Ch. 2 | 2/20 | Chemical Composition of Cells (Lab 3) |
| 3 | 2/25 | - Chemistry of Life | Ch. 2 | 2/27 | Metric and Microscopy (Lab 2) |
| 4 | 3/4 | -Cell Structure and Function | Ch. 3 | 3/6 | Cell Structure and Function (Lab 4) |
| 5 | 3/11 | Exam I -Cell Structure and Function | Ch. 3 | 3/13 | Enzymes (Lab 5) |
| 6 | 3/18 | -Cell Energy and Enzymes | Ch. 4 | 3/20 | Photosynthesis (Lab 6) |
| 7 | 3/25 | -Photosynthesis and Cellular Respiration | Ch. 4, 5 | 3/27 | Cellular Respiration (Lab 7) |
| 8 | 4/1 | Exam II -DNA | Ch. 9, 10 | 4/3 | Cell division (Lab 8) |
| 9 | 4/8 | -Mitosis | Ch. 6 | 4/10 | Fetal Pig Dissection I (Lab 27) |
| 10 | 4/15 | -Meiosis and Genetics | Ch. 7, 8 | 4/17 | Lab Exam and Fetal Pig Dissection II (Lab 29) |
| | 4/22 to 4/27 | Spring Break no class | | | |
| 11 | 4/29 | Exam III -Animal Behavior | | 5/1 | Nervous System and Senses (Lab 31) |
| 12 | 5/6 | -Evolution and Diversity | Ch. 11, 12 | 5/8 | Human Genetics: ABO Blood Typing (Labs 10) |
| 13 | 5/13 | Exam IV -Evolution and Diversity | Ch. 11, 12, 13, 14 | 5/15 | <u>Lecture today, not lab</u> -Diversity of Microbes and Fungi -Diversity of Plants |
| 14 | 5/20 | -Ecology | Ch. 19, 20, 21 | 5/22 | -Ecology <u>Lecture</u> |
| 15 | 5/27 | Holiday no class | | 5/29 | Seed Plants (Lab 18) |
| 16 | 6/3 | Urban Ecosystems <u>Lab</u> (Handout, not in lab manual) | | 6/5 | Cumulative Lecture and Lab Finals |

The last day to drop the course with a 'W' is 5/11

Homework Schedule: These are suggested homework assignments. Homework will not be collected or graded.

| Week | Date | Suggested assignments |
|-------------|-------------|--|
| 1 | 2/13 | Ch. 1 Visual Connection Questions, Review Questions, Critical Thinking Questions |
| 2 | 2/20 | Ch. 2 Visual Connection Questions, Review Questions, Critical Thinking Questions |
| 3 | 2/27 | Ch. 2 Review "Key Terms" |
| 4 | 3/6 | Ch. 3 Visual Connection Questions, Review Questions, Critical Thinking Questions |
| 5 | 3/13 | Ch. 3 Review "Key Terms" |
| 6 | 3/20 | Ch. 4 Visual Connection Questions, Review Questions, Critical Thinking Questions |
| 7 | 3/27 | Ch. 5 Visual Connection Questions, Review Questions, Critical Thinking Questions |
| 8 | 4/3 | Ch. 9 and 10 Visual Connection Questions, Review Questions, Critical Thinking Questions |
| 9 | 4/10 | Ch. 6 Visual Connection Questions, Review Questions, Critical Thinking Questions |
| 10 | 4/17 | Ch. 7 and 8 Visual Connection Questions, Review Questions, Critical Thinking Questions |
| 11 | 5/1 | Ch. 11 Visual Connection Questions, Review Questions, Critical Thinking Questions |
| 12 | 5/8 | Ch. 12 Visual Connection Questions, Review Questions, Critical Thinking Questions |
| 13 | 5/15 | Ch. 13 and 14 Visual Connection Questions, Review Questions, Critical Thinking Questions |
| 14 | 5/22 | Ch. 19 and 20 Visual Connection Questions, Review Questions, Critical Thinking Questions |
| 15 | 5/29 | Ch. 21 Visual Connection Questions, Review Questions, Critical Thinking Questions |
| 16 | 6/5 | Review all past homework questions for final |

Study tips and advice

Suggested study approaches for Lecture:

1. Come to every class and participate.
2. Read textbook chapters before class. They are relatively short and informative.
3. Do the questions at the end of each chapter. I will not grade these, but it is a good way to get ahead.
4. Review notes and slides on a weekly basis. Save yourself the stress of cramming the night before the exam and study continuously.
5. Come to office hours. Ask me any questions, even if you think they are "stupid questions." I won't judge!
6. Learning happens through discussion. Whenever we set aside time for group discussions take advantage of them.
7. Don't be discouraged by one bad grade, keep the larger picture in mind.

Time commitment: A minimum of 2 hours of studying for every hour of class (6 hours/week). Some of that time should be reading the book, and the rest reviewing notes.

Suggested study approaches for Lab:

1. Come to every lab and be active.
2. Read the lab intro before coming to class. They are short!
3. Make sure you know how to do all learning objectives listed at the beginning of the lab by the end of the lab. If you are having trouble, ask me in class, at office hours, or by email.
4. When in doubt on a lab question, ask me. I may not answer you right away, but I will lead you to the answer. By not giving you the answer right away it sticks with you better.
5. After every lab review the learning objectives.
6. Learning happens through discussion. Whenever possible talk things through with your lab mates.

Time commitment: A minimum of 1 hour of studying for every hour of lab (3 hours/week). Some of that time should be reading the lab book, and the rest reviewing lab material.

Key points:

- **Learning is not entirely about what to think, but how to think. If you are not sure of the point of a learning activity, ask me. I will be happy to fill you in on the learning strategies and intended outcomes.**
- **People (students, teachers, friends, ect.) will try to scare you into thinking that you will fail. I've seen many highly capable students succumb to fear and intimidation.**