



General Biology I | Lecture and Lab

Academic Year 2020-2021

Course Information

Course Numbers

BIO111/BIO111L

Total Credits

4 (3 Lecture + 1 Lab)

Time Requirement

75 hrs (Lecture 45hrs + Lab 30hrs)

Course Details

Recommended Prerequisites

High School Diploma or equivalent; General Education courses are highly recommended

Course Description

This course is the first in a two-part series covering a general study of life processes, emphasizing basic concepts of biology suitable for health science majors and as a general education elective for non-science majors. Concepts to be covered in this first part include: Scientific method, and importance of scientific literacy, biological principles of life; levels of biological organization, importance of chemistry for life; characteristics of biological molecules, the cell as a living unit, variations in cell structure, characteristics of the plasma membrane, diffusion, osmosis, active transport, other transport methods for large molecules, energy capture and transfer: photosynthesis and glucose catabolism.

Lecture and Laboratory Communication

A website will be set up on Canvas by your instructor.

Log in with your Username and password: <https://scuhs.instructure.com>

Faculty Information

Refer to the Canvas course webpage for this information.

Class Meeting Times

Refer to Canvas course webpage for this information.

Instructional Materials

Required Text(s)

Lecture: Campbell Biology Plus Mastering Biology with eText - Access Card package, 10th Ed. ISBN-13: 978-0134093413 -OR- Hoefnagels, 3e Biology: The Essentials ISBN-13: 978-1260092592

Lab

SCU General Biology Laboratory Manual (available on Canvas)

Course Purpose

Student Learning Outcomes

At the conclusion of this course, a successful student should be able to:

1. Demonstrate thorough knowledge and understanding of the fundamental principles and core concepts of biology.
2. Assess problems in the field of biology and develop solutions or strategies to solve those problems based on logic and the knowledge acquired during this course.
3. Professionally construct and express their ideas, thoughts, and concepts in biology through written and verbal communication.
4. Demonstrate competency in laboratory safety and in routine biological laboratory skills.

Course Schedule

(subject to slight modifications by the instructor)

Day	Lecture	Reading	Assessment
1	Exploring Life Chemical Context of Life	Chapter 1 Chapter 2	Class Participation
2	Water and Environment Carbon and Molecular Diversity	Chapter 3 Chapter 4	Class participation
3	The Structure and Function of Molecules A Tour of Cells	Chapter 5 Chapter 6	Exam 1
4	A Tour of Cells cont'd Membrane Structure and Function	Chapter 6 Chapter 7	Class participation
5	Metabolism	Chapter 8	Exam 2
6	Cellular Respiration	Chapter 9	Class participation
7	Photosynthesis Cell Communication	Chapter 10 Chapter 11	Exam 3
8	Molecular Basis of Inheritance & DNA Replication From Gene to Protein	Chapter 16 Chapter 17 Gene Expression Video	Class participation
9	Regulation of Gene Expression Review	Chapter 18	Class participation
10	Exam		Exam 4

Tentative Grading Procedures

Lecture

Assessment	Points	Weight (%)
Exam 1		20
Exam 2		20
Exam 3		20
Exam 4		30
Participation (in class mini quizzes/activities)		10
Total		100%

Lab Schedule

(subject to slight modifications by the instructor)

Day	Laboratory	Assessment
1	Scientific method Metric measurements	Lab notebook
2	Solubility in water Acids, Bases, and pH	Lab notebook
3	Microscopy/ cell structure Organic Substances	Quiz 1
4	Enzymes Diffusion and Osmosis across the membrane	Lab notebook
5	Anaerobic Respiration in Fungi	Midterm Exam Lab notebook
6	Diffusion and Osmosis across the membrane Chlorophyll	Quiz 2 Lab notebook
7	The Cell Cycle and Mitosis DNA: The Foundation of Life DNA Extraction	Lab notebook
8	Gel electrophoresis/DNA fingerprinting	Lab notebook
9	Patterns of Inheritance and Review	Class participation
10	Final Exam	Final Exam

Tentative Grading Procedures

Lab

Assessment	Weight (%)
Lab Quiz 1-2 (2 x 60 points)	20
Lab Notebook (15 x 10 points)	25
Lab Midterm	25
Lab Final	25
Participation	5
Total	100%

Lab Notebook:

- Pre-Lab: 45% of Total Assignment points (includes title, purpose, hypothesis, materials and procedure)
- Post Lab: 45% of Total Assignment points
- Neatness, grammar and clarity: 10% of Total assignment points

Grading scale:

Please note letter grades will be assigned only at the end of the trimester.

A = 90% to 100%

B = 80% - less than 90%

C = 70% - less than 80%

D = 60% - less than 70%

F = less than 60%

W = Withdrawal

Grading procedures:

The format of assessments may include multiple choice, short answer, labelling, fill-in-the-blank, or matching examinations. Participation points are required and will be assigned by the instructor as the course progresses using any of the following: in class mini quizzes, activities, online quizzes. For online quizzes students must have a phone, tablet, laptop or other internet connected device to participate. Students must be in class during the participation activities to receive participation marks.



Academic Integrity

Visit SCU's [Academic Integrity](#) page to review policies for professionalism and academic integrity.

Teaching Methods and Activities

There are 9 hours of lecture and 6 hours of lab each week for 5 weeks. Final exams (lecture courses only) will take place on Wednesday following the fourth week of courses. The course requires a significant time commitment from students. This commitment is both in terms of reading lecture outlines prior to reading the chapters, as well as reviewing the material.

Required Attire

Close-toed shoes, professional attire and lab coats are mandatory during all lab hours. No shorts, heels, or flip-flops will be allowed in the laboratory; hair longer than shoulder-length must be pulled back and held with a clip or hair tie. Gloves, goggles and additional safety equipment will be required per experiment.

Classroom Expectations

Please be professional, prompt, prepared, and polite always.

The professor will adhere to all policies as found in the Student Handbook. Cellular phones must be kept on silent during class and lab times. Students may not use a phone as a calculator. As a safety precaution, no food or drinks are allowed inside the lab, but there will be a designated break for eating and drinking outside of the lab.

Best Practices for Studying

- Read before and read after each class. Skim the chapter before it is covered in lecture in order to become comfortable with some of the terms associated with each topic.
- Review each chapter after it is covered in class to enhance your understanding of what was covered in class.
- Participate during class by taking notes during class and looking over them afterwards.
- Don't skip class, arrive late, or leave early. Ask questions for clarification when you don't understand the material.
- Do the assigned problems at the end of the chapters as close to the time as when the topic is covered in the class this will let you know how well you understand the material.
- Do not wait until the night before the homework is due to start the assignment. You will get more out of it if you take the time to really learn the concepts and review the material without being rushed.
- Find a group of students to study with. Seek out students dedicated to doing well in the course. This makes studying more fun and helps you learn the material better by teaching what you know and learning from your peers what you don't know. Explaining these concepts to others will help you learn the material even better.
- Stay focused by finding an environment where you can study with few distractions.
- Watch the suggested YouTube videos your professor has provided.



University Policies

Accommodations

As a learning-centered community, Southern California University of Health Sciences recognizes that all students should be afforded the opportunity to achieve their academic and individual potential. The University recognizes and supports the standards set forth in Section 504 of the Rehabilitation Act and

the American with Disabilities Act (ADA). In accordance with its mission and federal and applicable state laws, the University is committed to making reasonable accommodations for qualified applicants for admission and enrolled students with disabilities. A student who needs accommodation(s) due to a disability should contact the Academic Support Office located in the Learning Resource Center.

Faculty and Dr./Patient Relationships

SCU faculty are highly skilled. However, per University Policy, health care is offered to students through the University Health System only. Neither preclinical nor clinical faculty can provide advice, assessment, treatment, or other elements that would be considered part of a Doctor-Patient relationship outside of a clinical setting established for that purpose.

Learning Activities

Students are expected to spend at least two hours for each lecture hour of course time per week in activities and assessments outside the classroom. Examples of activities include but are not limited to writing papers; reading articles or text; small group work; presentations; completing assignments; preparation for assessments; online activities and other activities that do not include direct instructor interaction and involvement.

All university policies apply to this course and all others. For full policy information please consult the university SCU Policy Manual. For a quick reference guide to the following policies: make-up examination, F-challenge examination, grade posting, results of failing grades, student support information, syllabus amendments, special needs, student conduct, and attendance, please consult the academic policies document housed on the [Online Student Services](#) .