



SUNY Sullivan

Division of Liberal Arts and Sciences

Course Number and Section: SCI-1124-04-LM

Course Name: Principles of Biology I

Day(s) and Time: Day 1 Per 10-11, Day 2 Per 11

Gen Ed Learning Outcome: GE2-Natural Sciences

Semester:

Fall 2019-Spring 2020

Dates:

Sept. 5, 2019 – June 25, 2020

Last Day to Withdraw:

November 2, 2019

Credits: 4

Room: LMCS 202

Pre-requisite: High School Biology/Living Environment Regents Exam with a grade of 70% or higher.

Co-requisite: none

Instructor: Favata

Phone: (845) 434-5750 **Extension:** 4210

Office: LMCS 202

Office Hours:

Wednesday and Thursday 3:00 – 4:00 PM

College E-Mail: pfavata@sunysullivan.edu,

pfavata@lmcs.k12.ny.us

Official Catalog Description:

This course provides an intensive study of the fundamental principles of biology, emphasizing structure, function, processes and interaction. Topics include: chemical relationships, cell biology, reproduction, respiration, molecular and classical genetics, and evolution. Laboratory exercises are designed to exemplify aspects of lecture topics. These include examination of cells, tissue types, mitotic and meiotic stages, measurement of photosynthesis and respiration, and other topics. This course is designed both for students who intend to specialize in science and for those who want to obtain a thorough knowledge of biology as part of their general education. It is intended for students who successfully completed high school Regents Biology. This course is not open to students taking Developmental English or Math. With SCI 2152 Principles of Biology II, this course provides a solid foundation for upper division courses in biology.

Measurable Student Learning Outcomes:

General Education Learning Outcomes 2. NATURAL SCIENCES

Students will demonstrate:

1. understanding of the methods scientists use to explore natural phenomena, including observation, hypothesis development, measurement and data collection, experimentation, evaluation of evidence, and employment of mathematical analysis; and
2. application of scientific data, concepts, and models in one of the natural (or physical) sciences.

Upon completing this course, students will:

- Apply the scientific method
- Describe the basic processes of evolution
- Relate basic chemistry principles to the biochemical level of life

- Describe the structure and function of important biological compounds
- Describe methods of transport across cell membranes
- Describe the function of eukaryotic and prokaryotic structures and organelles
- Describe basic principles of metabolism including enzymatic reactions
- Describe the functions and processes involved in respiration and photosynthesis
- Describe the functions and basic processes of mitosis and meiosis
- Apply an understanding of Mendelian genetics to solve basic genetic questions
- Explain how DNA is replicated and used in gene expression

Required Text, Software, and Materials:

Campbell and Reece 2011 Biology 9th Ed. Benjamin Cummings: New York ISBN: 9780321638977
Symbiosis lab manual is available in the bookstore. ISBN: 9780536997265

Assessment and Evaluation (categories and grading evaluation method):

1. Lecture exams: 65% (3 exams worth 15%, 1 cumulative final worth 20%)
2. Class Assignments: 4%
3. Quizzes: 12%
4. Lab homework: 6%
5. Information management assignment (lab report) 8%
6. Lab participation : 5%

All assignments will be due on the dates provided. Late assignments will be graded as follows:

- 1 day late: 10% reduction
- 2 days late: 20% reduction
- 3 or more days late: no credit

Students who attend and actively participate during all laboratory exercises will be awarded the full amount of participation points. Points will be subtracted for lateness, leaving early, using or having visible electronic devices in laboratory, being disruptive, not following the instructor’s directions, talking during exams/quizzes, cheating/copying directly from another student’s work, acting disrespectful towards others, and any other behavior deemed inappropriate by the instructor.

Letter Grade and Numeric Equivalent Table:

A	4	93-100	B-	2.67	80-82	D+	1.33	67-69
A-	3.67	90-92	C+	2.33	77-79	D	1	63-66
B+	3.33	87-89	C	2	73-76	D-	0.67	60-62
B	3	83-86	C-	1.67	70-72	F	0	0-59

Attendance Policy:

An attendance policy is unique to each instructor. SUNY Sullivan does not have a standard policy. By taking this course, you agree to respect the attendance policy explained here and accept the consequences if you do not adhere to it.

You must be present, on time, and remain for the entirety of all lectures and labs. Late arrivals in lecture will count as half an absence. Attendance will be taken at the beginning of class. Should you miss attendance due to a late arrival, it is your responsibility to inform the instructor at the end of class. Students who miss more than six weeks (30 days) of class may be withdrawn from the course or given a grade of F. Absences incurred during the add/drop period prior to being enrolled in the course will be counted as absences. Students who arrive late to lecture or lab on days when exams or quizzes are given may not be allowed to take the exam or quiz and may be given a grade of zero.

If you miss an exam or quiz due to an excused absence, a make-up exam or quiz may be given at the instructor's discretion. You must contact the instructor within 24 hours of the original test time to be allowed to make it up.

The lab is an important and integral part of this course. Lab attendance is mandatory. No make-up labs are possible. Should the student miss 3 labs, for whatever reason, the student will be withdrawn from the course (both lecture and lab). Absences incurred during the add/drop period prior to being enrolled in the course will be counted as absences. After the last date of withdrawal, the student **will** receive an F for the course if three labs are missed, unless a W is justified in accordance with the College withdrawal policy.

Academic Integrity Policy:

Plagiarism, the use of another's words or ideas without giving proper credit, and cheating, are violations of ethical behavior within the academic community. Plagiarism or other acts of academic dishonesty must be reported to the Division Dean, and disciplinary action will be taken. If the act is caught after the semester has ended, action may still be taken with a grade change. Unless the instructor authorizes otherwise, all assignments must be individual, original work created for this specific class. Students who commit acts of academic dishonesty will be penalized in the following capacity:

Academic dishonesty in any form will not be tolerated. Instances of academic dishonesty will be reported and may result in dismissal from the course with a grade of F.

Withdrawal Policy:

Students may withdraw from a full semester (15 weeks) course at any time before the end of the tenth (10th) week. No "W" grade may be issued after the last day of the tenth (10th) week or its equivalent, except for extenuating circumstances, and then, only with the approval of the Division Dean. **The last day to withdraw from a course this semester is indicated in the header above.**

Brightspace Learning Management System (LMS):

SUNY Sullivan uses Brightspace to facilitate engagement and manage your academic progress in your courses and maintain connection with your instructors. Login to Brightspace at bright.sunysullivan.edu using the username and password you use for my.sunysullivan.edu. You are responsible for checking Brightspace regularly for course-related updates and information. Instructors will notify students about course-specific implementation on Brightspace, including announcements, assignment submissions, grading, and monitoring your class progress. When a course is cancelled on a given day, instructions

will be provided to students on Brightspace.

Students with Special Needs: Any student who may need an accommodation based on the impact of a disability should contact Ms. Eileen Howell within The Department of Learning and Student Development at (845) 434-5750 x4328 to establish eligibility and to coordinate reasonable accommodations. Students with disabilities may want to visit with the instructor regularly throughout the semester for help and advice with schoolwork.

Student Comments:

Students should feel free to contact the Division Dean, Rose Hanofee at email rhanofee@sunysullivan.edu-- if they wish to offer positive or negative feedback about an instructor or a class.

Additional Information:

Record Keeping. Each student is responsible for taking track of his or her grades. If you need help calculating a weighted average, please make an appointment to see me outside of the class

Civility statement: One of the expectations of the class is to maintain a positive learning environment, free of disruptions. Therefore, disruptive behavior will not be tolerated. Disruptive behavior includes, but is not limited to: rude, obscene, or disrespectful language; using a cell phone during class; habitual lateness or leaving class early; talking out of turn; eating in class; sleeping or any other activity that detracts from the class learning experience. When a person disrupts the class in any way, the instructor may dismiss the student (s) from class resulting in an absence for the day.

Topic Outline:

Outline of Topics:

Week	Week Beginning	Reading	Lecture Topic	Labs- HW to be announced.
1-2	Sept 9 Sept 16	Chapter 1 Chapter 1	Introduction/Themes in the study of life Themes in the study of life	Tools for Scientific Inquiry
3-4	Sept 23 Sept 30	Chapter 2 Chapter 2	The Chemical Context of Life The Chemical Context of Life	
5-6	Oct 7 Oct 14	Chapter 3 Chapter 3 and 4	Water and the Fitness of the Environment Carbon and the molecular diversity of life	Using the Microscope
7-8	Oct 25 Oct 21 Oct 28	Chapter 5	EXAM 1 The Structure and Function of Large Biological Molecules	

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9-10	Nov 4 Nov 11	Chapter 5 Chapter 7	The Structure and Function of Large Biological Molecules Membrane Structure and Function	pH and Buffers
11-12	Nov 25 Dec 2	Chapter 6 Chapter 8	A Tour of the Cell An Introduction to Metabolism	
13-14	Dec 9 Dec 16 Dec 19	Chapter 8	An Introduction to Metabolism An Introduction to Metabolism EXAM 2	Macromolecules
15-17	Jan 6 Jan 13	Chapter 9 Chapter 9	Cellular respiration Cellular respiration	Diffusion and Osmosis
18-20	Jan 20 Jan 27	Chapter 10 Chapter 10	Photosynthesis Photosynthesis	Microscopes and Cells
21-22	Feb 3 Feb 10 Feb 14	Chapter 12 Chapter 12	The cell cycle EXAM 3	Enzymes
23-24	Feb 24 March 2	Chapter 13 Chapter 13	Meiosis Meiosis	Enzymes (<i>continued</i>) Library and research guidance for paper due March 30.
25-26	March 9 March 16	Chapter 14 Chapter 14	Mendel and the gene idea Mendel and the gene idea	Photosynthesis
27-28	March 23 March 30	Chapter 15 Chapter 16	The chromosomal basis of inheritance The chromosomal basis of inheritance	Mendelian Genetics
29-30	April 20 April 27	Chapter 17 Chapter 17	The molecular basis of inheritance The molecular basis of inheritance	Chromosomes and Cell Division

31-32	May 4 May 11	Chapter 17	From Gene to Protein From Gene to Protein	Mendelian Genetics
33-34	May 12- June 5 June 8-9	Chapter 17 TBD	<i>Catch up and review</i> FINAL EXAM	