

	<u>Date</u>	<u>Initials</u>
Division/School Approval:	1/16/2020	TMC
Curriculum Committee Approval:	2/14/2020	TSG
Senate Approval:	2/28/20	VO

SUNY SCHENECTADY Course Outline

ACADEMIC DIVISION/SCHOOL: Math, Science, Technology, and Health

PREPARED BY: Syeda Munaim

COURSE CODE: BIO 142 **COURSE TITLE:** Biology II

LECTURE HOURS/WEEK: 3 **LAB HOURS/WEEK:** 3 **CREDIT HOURS:** 4

PREREQUISITE(S): BIO 141

PREREQUISITE or CONCURRENT COURSE: None

COREQUISITE: None

COURSE DESCRIPTION:

This is the second of a two semester sequence designed for science majors which explores the central concepts of modern biology. This course focuses on the concepts of population genetics; biodiversity and biosystematics; plant, fungal, and animal morphology and physiology; ecology; animal behavior and development, and the mechanisms of evolution. The laboratory portion of the course consists of topics correlating with the lecture. This course includes dissection and a research project for which students may need laboratory time outside of the scheduled laboratory periods.

	SUNY SCHENECTADY S-CORE COURSE	SUNY GENERAL EDUCATION COURSE
APPROVED CATEGORY 1	Scientific Literacy	Natural Science
APPROVED CATEGORY 2	Choose an item.	Choose an item.
RECOMMENDED CATEGORY 1	Choose an item.	Choose an item.
RECOMMENDED CATEGORY 2	Choose an item.	Choose an item.

STUDENT LEARNING OUTCOMES:

Students who have successfully completed this course will have:

- identified and used appropriate tools to study diverse life forms and their functions at different levels of hierarchy;
- demonstrated knowledge of population genetics, biosystematics, evolution, and adaptation of species;
- demonstrated knowledge of the fundamental concepts and theories that are the basis of the field of ecology; and
- conducted a scientific investigation having applied the scientific method, authored a poster, and given an oral presentation.

REPRESENTATIVE TEXT(S):

TITLE	AUTHOR(S)	PUBLISHER
OpenStax Biology 2 nd Edition Biology 2e		OpenStax, CNX
Symbiosis/Investigating biology (Current Edition)	Munaim, S.I.	Pearson, Boston, MA
SPECIAL NOTES:		

COURSE MATERIALS:

Textbook web site, journal articles, online work

NOTE: Grading and assessment criteria may appropriately differ. Grades focus on what individual students have learned while assessments focus on entire cohorts of students. Each instructor will determine his/her grading criteria for the course and state on the course syllabus.

EVALUATION METHODS:

Exams, quizzes, assignments, laboratory practical, laboratory assignments, poster, research presentation

COURSE CONTENT OUTLINE:

NOTE: College policy requires a final exam or final week activity.

WEEK(S)/HOUR(S)	TOPIC
1	Population Genetics
2	Population Genetics Bioinformatics
3	Mechanisms of Evolution
4	Evolutionary History Origin of Species and Biodiversity
5	Biosystematics I: Microbes
6	Biosystematics II: Protista
7	Biosystematics III: Fungi
8	Biosystematics IV: Plants
9	Biosystematics V: Animals
10	Animal Morphology and Physiology
11	Plant Morphology and Physiology
12	Animal Development
13	Ecosystems Nutrient Cycling
14	Ecology
15	Behavior
16	Comprehensive Final Exam

LAB CONTENT OUTLINE:

LAB WEEK	TOPIC
1	Development of Research Project: Discussion Library Search and Planning
2	Research Discussion Bacteria in the Environment
3	Bacteriology/Identification Techniques Observations from Bacteria in the Environment
4	Evolution/Population Genetics: Testing the Hardy Weinberg Theorem
5	Mechanisms of Evolution and Biodiversity
6	Biosystematics: Protista and Plants Begin Research
7	Biosystematics: Fungi Research Continued
8	Biosystematics: Animals Research Continued
9	Animal Morphology and Physiology Dissection Research Continued
10	Plant Morphology and Physiology Dissection Research Continued
11	Animal Development
12	Nutrient Cycling
13	Ecology
14	Behavior
15	Laboratory Practical