COQUITLAM COLLEGE
Established 1982

COURSE OUTLINE

Effective Date: Spring 2024

COURSE INFORMATION

Course Title: Principles of Biology I

Course Number: BIOL 101

Credits: 4

Total Weeks: 14 (Fall, Spring)
12 (Summer)

Total Hours: 91

Course Level: ☒ First Year ☐ Second Year
☐ New ☐ Revised Course
☐ Replacement Course

Department: Sciences

Department Head: S. Girdhar

Former Course Code(s) and Number(s) (if applicable): N/A

Pre-requisites (If there are no prerequisites, type NONE): BIOL 104 or ATPH 12 (Biology 12) or equivalent and CHEM 11 or equivalent

Co-requisite Statement (List if applicable or type NONE): NONE

Precluded Courses: N/A

COURSE DESCRIPTION

This course is designed as the first in a pair of courses in biological sciences that provide a detailed examination of the basic unit of life - the cell. Organisms are studied with a particular emphasis on the structure and function of systems in both plants and animals. Three-hour labs are an integral part of the course.

LEARNING OUTCOMES

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

- Understand fundamental concepts that characterize biology, including concepts that characterize cell, plant and animal physiology, genetics, evolution, ecology, diversity, and molecular biology.
- Describe and practice laboratory safety guidelines relating to working with chemicals, microorganisms, and other biological specimens.
- Assess personal needs regarding study time and methods and accept personal responsibility for the learning process.
- Improve confidence in scientific knowledge and ability to apply knowledge to related situations.
- Understand the relationship between science and other subject areas, including interdisciplinary approaches to global issues and the relationship of core concepts from chemistry, statistics, geology and other disciplines to life science concepts.
- Read and discuss articles related to current issues in biology.
- Take an active role in one's own education by taking personal responsibility for learning, learn to explain topics in students' own words, understanding the need to stay on top of material given
- Work well independently and in small groups. Show self-direction and motivation and contribute to group work.
- Understand the scientific method and critically evaluate scientific information as related to real world problems.

INSTRUCTION AND GRADING

Instructional (Contact) Hours:

Type	Duration
Lecture	52
Seminars/Tutorials	
Laboratory	39
Field Experience	
Other (*specify):*	
Total	91

Grading System: Letter Grades ☒ Percentage ☐ Pass/Fail ☐ Satisfactory/Unsatisfactory ☐ Other ☐

Specify passing grade: 50%

Evaluation Activities and Weighting (total must equal 100%)

Assignments: % *Specify number of, variety, and nature of assignments:*	Lab Work: % Lab Reports 15% Lab Exam 20%	Participation: 5% *Specify nature of participation:*	Project: % *Specify nature of project:*
Quizzes/Test: 15%	Midterm Exam: 20%	Final Exam: 25%	Other: % *Specify:*

TEXT(S) AND RESOURCE MATERIALS

Textbook: Freeman, S., Allison, L., Black, M., Podgorski, G., Taylor, E., Harrington, M., Sharp, J. C. (2018). Biological Science, Third Canadian Edition. Pearson.

Lab Manual: Morgan, J. G., Carter, M. E. G. C. (2001). Investigating Biology Laboratory Manual, Fifth Edition. Pearson

COURSE TOPICS

List topics and sequence covered.

Week	Topic	Chapter
Week 1	Scientific method, characteristics of matter and biological molecules	1-4
Week 2	Cell structure: membranes and organelle function	6-7
Week 3	Cell-to-cell interactions and the cell cycle	11-12
Week 4	Cellular energetics : metabolism and cell respiration	9
Week 5	Cellular energetics: photosynthesis	10
Week 6	Molecular basis of inheritance	15-16
Week 7	Flow of genetic information and gene expression	17, 19
Week 8	Structure and processes in plants	34-35
Week 9	Plant nutrition and control systems	36-38
Week 10	Form and processes in animals	39-40
Week 11	Animal nutrition, respiratory and circulatory systems	41-43
Week 12	Animal sensory, and chemical signaling	44, 46

Week 13	Animal reproductive and immune systems	47-48
Week 14	Final Exam	

NOTES

1. Students are required to follow all College policies. Policies are available on the website at: Coquitlam College Policies
2. To find out how this course transfers, visit the BC Transfer Guide at: bctransferguide.ca
3. This is a lab course. Weekly lab assignments will be introduced and conducted during the lab. Some lab assignments will be completed during class, and some will be completed and submitted on a later date. The goals of the labs are to prepare for the lab exam, support concepts in biology and encourage the development of analytical, practical skills. Students are expected to attend all lectures and labs.
4. Attendance in the labs is mandatory and any missed work will be assigned a zero grade.
5. Students must achieve a minimum of 50% to pass the course, which includes both lecture and lab components. If a student fails the lab component of the course, a maximum of "P" grade will be given irrespective of the grade received in the lecture component.

Last Reviewed: April 2024
Last Revised: September 2022