

Last Revised: Fall 2019

### COURSE INFORMATION

**Course Title:** Principles of Biology I **Course Number:** BIOL 101 **Credits:** 4

**Total Weeks:** 14 (Fall, Spring) **Total Hours:** 91  
12 (Summer)

**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 (BIOL 12) or equivalent and CHEM 11 or equivalent, or by permission

**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 in regard to 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 ( <i>specify</i> ):	
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: % <i>Specify number of, variety, and nature of assignments:</i>	Lab Work: % Lab Reports 15% Lab Exam 20%	Participation: 5% <i>Specify nature of participation:</i>	Project: % <i>Specify nature of project:</i>
Quizzes/Test: 15%	Midterm Exam: 20%	Final Exam: 25%	Other: % <i>Specify:</i>

**TEXT(S) AND RESOURCE MATERIALS**

Provide a full reference for each text and/or resource material and include whether required/not required.

Textbook: Reece, J.B. et al. 2014 Campbell Biology, (Cdn Edition), Pearson.

Lab Manual: Dolphin, Biological Investigations (Form, Function, Diversity process, 7th Ed. McGraw/Hill/2005 (and supplements)

**COURSE TOPICS**

List topics and sequence covered.

Week	Topic	Chapter
Week 1	Scientific method, organization of matter and interaction among atoms.	1-3
Week 2	Structure and properties of biological molecules. Cell Structure: membrane and organelle form and function.	4-7
Week 3	Cellular energetics: metabolism and cellular respiration	8-9
Week 4	Cellular energetics: photosynthesis	10
Week 5	Molecular basis of inheritance	16-17
Week 6	Flow of genetic information and DNA technology	17-18, 20

Week 7	Structure and adaptive processes in plants. <b>MIDTERM EXAM</b>	35
Week 8	Transport processes in plants	36
Week 9	Plant nutrition and control systems in plants	37, 39
Week 10	Integumentary, skeletal and nutrition systems in animals.	40-41
Week 11	Respiratory, circulatory, and immune systems	42-43
Week 12	Excretory, endocrine, and reproductive systems	44-46
Week 13	Nervous, sensory, and motor mechanisms	48-50
Week 14	<b>FINAL EXAM</b>	

**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](http://bctransferguide.ca)