



BIOL-201 – Cell Biology

University Arts and Science

Effective Term & Year: Fall 2022
Course Outline Review Date: 2023-03-01

Program Area: Math and Sciences

Description:

This course studies the relationship between cell structure and cell function. The structure/function of the cell membrane and most organelles are covered in detail. Topics also include the evolution of the eukaryotic cell, cell movements, and cell reproduction. An introduction to cytogenetics is also presented. The material in Biology 201 is an integral part of an undergraduate biological sciences program and is especially appropriate for students interested in health-related sciences, microbiology, genetics, developmental biology, biochemistry, botany, zoology, and general biology.

Program Information:

This course can be used as either a required course or an elective in several University Studies Programs. Refer to the College Program Guide for additional information.

Delivery Methods: On-campus (Face-to-Face)

Credit Type: College of the Rockies Credits

Credits: 3

Course type/s: Lab Sciences, Sciences

Instructional Activity and Hours:

Activity	Hours
Classroom, Directed Studies or Online Instruction	45
Seminar/Tutorials	

Laboratory/Studio	45
Practicum/Field Experience	
Co-op/Work Experience	
Other	
Total	90

Course Requisites:

- Completed the following:
 - BIOL101 – Introduction to Biology 1 (3)
 - BIOL102 – Introduction to Biology 2 (3)
 - CHEM101 – Fundamentals of Chemistry 1 (3)
 - CHEM102 – Fundamentals of Chemistry 2 (3)

Flexible Assessment: Yes

In some cases students may be able to apply for recognition of prior learning outside the classroom. This flexible assessment process provides equivalent course credit. It is a rigorous process that may include external evaluation, worksite assessment, demonstration, standardized test, self-assessment, interview, products/portfolio, and challenge exam, or other measures as appropriate. Tuition fees apply. Contact an education advisor for more information.

Course Transfer Credit:

For information about receiving transfer credit for courses taken at other BC institutions, please see <http://www.bctransferguide.ca>. All requests for course transfer credit from institutions in BC or elsewhere should go to the College of the Rockies Enrollment Services office.

Textbook Resources:

Textbook selection varies by instructor and may change from year to year. At the Course Outline Effective Date the following textbooks were in use:

J. Hardin, G. Bertoni and L.J. Kleinsmith. *Becker's World of the Cell 9th ed.*, Pearson, 2016.

Please see the instructor's syllabus or check COTR's online text calculator <https://textbook.cotr.bc.ca/> for a complete list of the currently required textbooks.

Learning Outcomes:

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

- compare and contrast structures of prokaryotic and eukaryotic cells and understand the significance of these differences in patterns of evolution and treatment of disease;
- discuss the relationship between the structure of organelles and their function – i.e.. “form follows function” at the cellular level;
- relate the general structure and chemical characteristics of the five major groups of molecules important to life (water, carbohydrates, lipids, proteins, nucleic acids) to their function in cellular processes and cellular structure;
- compare and contrast several theories of the evolution of biologically active molecules and cells;
- discuss the specific roles each organelle and system play in maintaining homeostasis at the cellular level;
- read course-related information in scientific publications with increased understanding and interest;
- appreciate the relatively new position of cell biology in the history of science and its origins in several other scientific disciplines;
- develop laboratory skills related to cell biology techniques, equipment, instruments and projects; and
- develop microphotography skills.

Course Topics:

- Structural Organization of Cells
- Biological Molecules
- From Molecules to Cells
- Membrane Structure and Function
- Cytoplasmic Compartments
- Cell Movements
- The Nuclear Compartment

See instructor Syllabus for the detailed outline of weekly readings, activities and assignments.

Evaluation and Assessments

Assessment Type: On-Campus (face-to-face)

Assessment Type	% of Total Grade
Midterm Tests	30%
Final Exam	35%
Laboratory Exam	10%

Assignments, Reports and Laboratory book	25%
Total	100%

Grade Scheme

A+	A	A-	B+	B	B-	C+	C	C-	D	F
>=90	89-85	84-80	79-76	75-72	71-68	67-64	63-60	59-55	54-50	<50

Pass requirements: None

Evaluation Notes: A grade of “D” grants credit, but may not be sufficient as a prerequisite for sequential courses.

Exam Attendance:

Students must attend all scheduled exams at the appointed time and place. Instructors may approve an alternate exam to accommodate an illness or personal crisis. Department heads will consider other written requests. Any student who misses a scheduled exam without prior approval will receive a “0” on the exam.

Academic Policies:

College of the Rockies policies related to courses can be found at <https://cotr.bc.ca/about-us/college-policies/> and include the following:

- Policy 2.4.3 Students with Documented Disabilities
- Policy 2.4.4 Student Conduct (plagiarism, other cheating, behavioral misconduct)
- Policy 2.5.8 Academic Performance
- Policy 2.5.3 Grade Appeal
- Policy 2.4.9 Student Concerns Re Faculty

Course Changes:

The College of the Rockies updates course outlines regularly to meet changing educational, employment and marketing needs. The instructor will notify students in writing of any updates to this outline during the semester. The instructor reserves the right to revise, add or delete material while meeting the learning outcomes of this course outline.