



UNIVERSITY OF CALGARY
FACULTY OF SCIENCE
DEPARTMENT OF BIOLOGICAL SCIENCES
COURSE OUTLINE

1. **Course: BIOLOGY 331– INTRODUCTION TO CELLULAR AND MOLECULAR BIOLOGY**

Lecture Sections: L01 MWF 12:00-12:50 ST 148 WINTER 2015

Course Coordinator	Dr. C. Shemanko	BI 238C	220-3861	shemanko@ucalgary
Instructor(s):	Dr. D. Muench	BI 397	220-7935	dsmuench@ucalgary.ca
	Dr. V. Zaremberg	BI 461	220-4298	vzaremb@ucalgary.ca

Course email address: biol331@ucalgary.ca - please send all course related inquiries to this address.

<https://d2l.ucalgary.ca>: Study material, assignments, background information, readings, and course information.

Biological Sciences Department BI 186; (403) 220-3140; biosci@ucalgary.ca

2. **PREREQUISITE(S):** Biology 311

See section 3.5.C in the Faculty of Science section of the online Calendar
(<http://www.ucalgary.ca/pubs/calendar/current/sc-3-5.html>)

3. **Grading:** The University policy on grading and related matters is described sections F.1 and F.2 of the online University Calendar. In determining the overall grade in the course the following weights will be used:

Tutorial Assignments (4% each)	8% total
Tutorial quizzes (1% each)	8% total
Tutorial Presentation (group work)	4%
Tutorial exams (5% each)	10%
1 Preliminary Exam	
Midterm Saturday March 7, 2015	35%
Final Exam	35% total

“Each piece of work (tutorial assignments, midterm test or final examination) submitted by the student will be assigned a percentage score. The student’s average percentage score for the various components listed above will be combined with the indicated weights to produce an overall percentage for the course, which will be used to determine the course letter grade.”

4. **Missed Components of Term Work:** The regulations of the Faculty of Science pertaining to this matter are found in the Faculty of Science area of the Calendar in Section 3.6. It is the student's responsibility to familiarize himself/herself with these regulations. See also Section E.6 of the University Calendar

5. **Scheduled out-of-class activities:** Dates and times of approved class activities held outside of class hours.

Mid-Term Saturday, March 7, 2015 Time 9:30 am-11:30 am Locations ST 140 and 148

(Please schedule work and other activities accordingly.)

REGULARLY SCHEDULED CLASSES HAVE PRECEDENCE OVER ANY OUT-OF-CLASS-TIME-ACTIVITY. If you have a clash with this out-of-class-time-activity, please inform your instructor as soon as possible so that alternative arrangements may be made for you.

6. **Course Materials:** TEXT: Required: Cell and Molecular Biology, Concepts and Experiments. Gerald Karp, John Wiley & Sons Inc., Toronto. 7th Edition, 2013.

7. **Examination Policy:** No electronic or written aids (eg. cell phones, tablets, computers, PDAs, notes, textbooks) will be allowed during writing of any exams. Non-programmable calculators will be permitted to answer quantitative questions on exams, if applicable, and permission to do this will be clearly indicated on the examination paper. Students should also read the Calendar, Section G, on Examinations.

8. **Writing across the curriculum statement:** e.g. “In this course, the quality of the student’s writing in laboratory reports will be a factor in the evaluation of those reports.” See also Section E.2 of the University Calendar.

9. **Human studies statement:** indicating whether students in the course may be expected to participate as subjects or researchers. See also [Section E.5](#) of the University Calendar.

STUDIES IN THE BIOLOGICAL SCIENCES INVOLVE THE USE OF LIVING AND DEAD ORGANISMS. Students are expected to be familiar with <http://www.ucalgary.ca/pubs/calendar/current/sc-5-1.html> of the on-line calendar.

See also <http://www.ucalgary.ca/pubs/calendar/current/e-5.html>.

10. OTHER IMPORTANT INFORMATION FOR STUDENTS:

(a) **Misconduct:** Academic misconduct (cheating, plagiarism, or any other form) is a very serious offence that will be dealt with rigorously in all cases. A single offence may lead to disciplinary probation or suspension or expulsion. The Faculty of Science follows a zero tolerance policy regarding dishonesty. Please read the sections of the University Calendar under [Section K](#). Student Misconduct to inform yourself of definitions, processes and penalties.

(b) **Assembly Points:** In case of emergency during class time, be sure to FAMILIARIZE YOURSELF with the information on [assembly points](#).

(c) **Academic Accommodation Policy:** Students with documentable disabilities are referred to the following links: Students with Disabilities: <http://www.ucalgary.ca/pubs/calendar/current/b-1.html> [B.1](#) and Student Accessibility Services: <http://www.ucalgary.ca/access/>.

(d) **Safewalk:** Campus Security will escort individuals day or night (<http://www.ucalgary.ca/security/safewalk/>). Call 220-5333 for assistance. Use any campus phone, emergency phone or the yellow phones located at most parking lot pay booths.

(e) **Freedom of Information and Privacy:** This course is conducted in accordance with the Freedom of Information and Protection of Privacy Act (FOIPP). As one consequence, students should identify themselves on all written work by placing their name on the front page and their ID number on each subsequent page. For more information see also <http://www.ucalgary.ca/secretariat/privacy>.

(f) **Student Union Information:** VP Academic Phone: 220-3911 Email: suvpaca@ucalgary.ca.
SU Faculty Rep. Phone: 220-3913 Email: sciencerep@su.ucalgary.ca; [Student Ombudsman](#)

(g) **Internet and Electronic Device Information:** You can assume that in all classes that you attend, your cell phone should be turned off unless instructed otherwise. Also, communication with other individuals, via laptop computers, Blackberries or other devices connectable to the Internet is not allowed in class time unless specifically permitted by the instructor. If you violate this policy you may be asked to leave the classroom. Repeated abuse may result in a charge of misconduct.

(h) **U.S.R.I.:** At the University of Calgary, feedback provided by students through the Universal Student Ratings of Instruction (USRI) survey provides valuable information to help with evaluating instruction, enhancing learning and teaching, and selecting courses (www.ucalgary.ca/usri). Your responses make a difference - please participate in USRI Surveys.

Department Approval _____ ORIGINAL SIGNED _____ Date _____

Associate Dean's Approval for
out of regular class-time activity: _____ ORIGINAL SIGNED _____ Date: _____

B331 co W15; 12/19/2014 9:56 AM

UNIVERSITY OF CALGARY
DEPARTMENT OF BIOLOGICAL SCIENCES
COURSE OUTLINE

BIOLOGY 331

INTRODUCTION TO CELL AND MOLECULAR BIOLOGY

TERM: Winter 2015 SECTION NO: 01/02

PREREQUISITE: Biology 311

A student may not register in a course without a grade of at least C- in each prerequisite course.

COURSE COORDINATOR: Dr. C. Shemanko BI 238 C 220-3861

LECTURERS: Dr. D. Muench BI 397 220-7935
Dr. V. Zaremberg BI 390 220-4298

LECTURES: L01 MWF 12:00 – 12:50 ST 148
L02 MWF 10:00 – 10:50 EEEL 210

TEXTS: Required: Cell and Molecular Biology, Concepts and Experiments, Gerald Karp,
John Wiley & Sons Inc., Toronto. 7th Edition, 2013.

RESERVE SERVICES: Yes

MARK DISTRIBUTION: Composition of Final Grade

Tutorial Assignments (4% each)	8% total
Tutorial quizzes (1% each)	8% total
Tutorial Presentation (group work)	4%
Tutorial exams (5% each)	10%
1 Preliminary Exam	
Midterm Saturday March 7, 2015	35%
Final Exam	35% total

There will be a Final Examination scheduled by the Registrar's Office.

PLEASE NOTE: MAKE-UP EXAMINATIONS MAY NOT BE IN THE SAME FORMAT AS ORIGINAL MID-TERM AND FINAL EXAMS.

DATE	Instructor	
JAN		
12	VZ	Course Introduction
14	VZ	Introduction to cellular membranes
16	VZ	Plasma membrane I
19	VZ	Plasma membrane II
21	VZ	Ribosome assembly and protein synthesis (eukaryotes)
23	VZ	Endomembrane system
26	VZ	Endoplasmic reticulum & Golgi
28	VZ	Membrane trafficking I
30	VZ	Membrane trafficking II
FEB		
2	VZ	Lysosomes and endocytosis
4	VZ	Protein import into organelles
6	VZ	Peroxisomes- Mitochondria
9	VZ	Chloroplast
11	VZ	Cytoskeleton I
13	VZ	Cytoskeleton II
		READING WEEK Feb 15-22
23	VZ	Cytoskeleton III
25	DM	Plant Cell Biology I
27	DM	Plant Cell Biology II
MAR		
2	DM	Plant Cell Biology III
4	VZ-DM	Question and Answer for Midterm
6	CS	DNA organization and chromosome structure, epigenetics
7	VZ-DM	MIDTERM EXAMINATION (Jan 8- Mar 2) SATURDAY
9	CS	Stem cells, therapeutic and reproductive cloning
		<u>Interactions between cells and environment</u>
11	CS	Cell-cell interactions
13	CS	Cell-junctions I & II
16	CS	Extracellular Matrix
		<u>Cell communication</u>
18	CS	Introduction to Intercellular Signaling
20	CS	Cell signaling: G proteins & cAMP pathway
23	CS	Cell signaling: IP3/Ca ²⁺ /PKC pathways.
25	CS	Cell signaling: Receptor tyrosine kinases
		<u>Control of gene expression and reprogramming</u>
27	CS	Gene regulation and steroid hormones
30	CS	Regulation of the cell cycle: I
APR		
1	CS	Regulation of the cell cycle: II
3		Good Friday
		<u>Cancer and what protects us</u>
6	CS	DNA damage and cell cycle checkpoints
8	CS	Apoptosis
10	CS	Cell biology of cancer: Introduction
13	CS	Tumor Suppressors, Proto-oncogenes and Oncogenes
15	CS	Question and Answer for Final Exam
Week of		Tutorial Schedule

Jan 12	VZ	Tutorial 1
Jan 19	VZ	Tutorial 2
Jan 26	VZ	Tutorial 3
Feb 2	VZ	Group Presentations
Feb 9	VZ	Tutorial 4
Feb 23	VZ	Tutorial Quiz
Mar 2		
Mar 9	CS	Tutorial 5
Mar 16	CS	Tutorial 6
Mar 23	CS	Tutorial 7
Mar 30	CS	Tutorial 8
April 6	CS	Tutorial Quiz

Final exam includes material from March 6 though April 15

January 12 – February 23

Dr. Zaremborg
Telephone 220-4298; e-mail biol331@ucalgary.ca

February 25, Mar 2

Dr. Muench
Telephone 220-7935; email biol331@ucalgary.ca

March 6 - April 15

Dr. Shemanko
Telephone 220-3861; email biol331@ucalgary.ca

OFFICE HOURS WILL BE ANNOUNCED BY EACH INSTRUCTOR. PLEASE USE THE COURSE EMAIL (biol331@ucalgary.ca) FOR CORRESPONDENCE, EXCEPT IN GENUINE EMERGENCIES.

YOU MUST ATTEND THE TUTORIAL SESSION IN WHICH YOU ARE REGISTERED.

Grading Scale:

92.5+ A+
87.5 A
82.5 A-
77.5 B+
72.5 B
67.5 B-
62.5 C+
57.5 C
52.5 C-
50.0 D+
47.5 D
<47.5 F