



UNIVERSITY OF CALGARY
DEPARTMENT OF BIOLOGICAL SCIENCES
COURSE OUTLINE

1. Course: **CMMB/MDSC 561 - CANCER BIOLOGY**

Lecture Sections: L01 TR 15:30 ST 064 Winter 2018

Course Coordinator: Dr. K.Y. Lee

Instructor(s): **Dr. K.Y. Lee** HM 359 220-8723 kylee@ucalgary.ca
C. Friedenreich (cmfriede@ucalgary.ca); R. Johnston (rnjohnst@ucalgary.ca); T. Ogilvie (ogilvie@ucalgary.ca); G. Williams (gareth.williams2@ucalgary.ca); D. Heng (Daniel.heng@ucalgary.ca); M. Gallo (marco.gallo@ucalgary.ca); I. Csizmadi (icsizmad@ucalgary.ca); L. Galloway (lyle.galloway@ahs.ca); K. Riabowol (karl@ucalgary.ca); D. Senger (senger@ucalgary.ca); F. Jirik (irik@ucalgary.ca); D. Mahoney (djmahone@ucalgary.ca); D. Derksen (dderksen@ucalgary.ca); M. Monument (mjmonume@ucalgary.ca); J. Rosales (rosales@ucalgary.ca)

D2L Website: <http://elearn.ucalgary.ca/d2l-student/> CMMB/MDSC 561 L01
Biological Sciences Department BI 186; (403) 220-3140; biosci@ucalgary.ca

2. **PREREQUISITES:** BIOL 331, CMMB 411 and one of BCEM 401 or 443

NOTE: A student may not register in a course unless they have a grade of at least C- in each prerequisite course. 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 in “Academic Regulations, sections F.1 and F.2” of the online University Calendar (<http://www.ucalgary.ca/pubs/calendar/current/f-1.html> and <http://www.ucalgary.ca/pubs/calendar/current/f-2.html>). In determining the overall grade in the course, the following weights will be used:

Midterm exam	20 %	Feb 27, 2018	In-Class
Oral presentation	20 %		
Class Participation/Attendance	5%		
Term paper	30 %		
Final Exam	25 %		

(There will be a final exam scheduled by the Registrar's office.)

A passing grade is required for the term paper.

Each piece of work (oral presentation, term paper, 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.

Letter Grade	A+	A	A-	B+	B	B-	C+	C	C-	D+	D
Min. Percent Required	95	90	85	80	76	72	68	64	60	56	50

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: <http://www.ucalgary.ca/pubs/calendar/current/sc-3-6.html>. It is the student's responsibility to familiarize himself/herself with these regulations. See also <http://www.ucalgary.ca/pubs/calendar/current/e-3.html>.

5. Dates and times of class exercises held outside of class hours N/A

6. **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: <http://www.ucalgary.ca/pubs/calendar/current/g.html>.
7. In this course, the quality of the student's writing in the term paper will be a factor in the evaluation. See also <http://www.ucalgary.ca/pubs/calendar/current/e-2.html>.

8. ETHICS IN THE BIOLOGICAL SCIENCES

Studies in the Biological Sciences involve the use of living and dead organisms. Students taking laboratory- and field-based courses in these disciplines can expect involvement with and experimentation on such materials. Students perform dissections on dead or preserved organisms in some courses. In particular courses, students experiment on living organisms, their tissues, cells, or molecules. Sometimes field work requires students to collect a variety of living materials by many methods, including humane trapping.

All work on humans and other animals conforms to the Helsinki Declaration and to the regulations of the Canadian Council on Animal Care. The Department strives for the highest ethical standards consistent with stewardship of the environment for organisms whose use is not governed by statutory authority. Individuals contemplating taking courses or majoring in one of the fields of study offered by the Department of Biological Sciences should ensure that they have fully considered these issues before enrolling. Students are advised to discuss any concern they might have with the Undergraduate Program Director of the Department.

9. OTHER IMPORTANT INFORMATION FOR STUDENTS:

- (a) **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, suspension, or expulsion. The Faculty of Science follows a zero tolerance policy regarding dishonesty. Please read the sections of the University Calendar under K. Student Misconduct (<http://www.ucalgary.ca/pubs/calendar/current/k.html>) 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 at <http://www.ucalgary.ca/emergencyplan/assemblypoints>.
- (c) **Student Accommodations:** Students needing an Accommodation because of a Disability or medical condition should contact Student Accessibility Services in accordance with the Procedure for Accommodations for Students with Disabilities available at http://www.ucalgary.ca/policies/files/policies/procedure-for-accommodations-for-students-with-disabilities_0.pdf.

Students needing an Accommodation in relation to their coursework or to fulfil requirements for a graduate degree, based on a Protected Ground other than Disability, should communicate this need, preferably in writing, to the Associate Head of Biological Sciences, Dr. H. Addy by email addy@ucalgary.ca or phone 403 220-3140.

- (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 (FOIPPA). 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: 403 220-3911 Email: suvpaca@ucalgary.ca
SU Faculty Rep. Phone: 403 220-3913. Email: science1@su.ucalgary.ca, science2@su.ucalgary.ca and science3@su.ucalgary.ca;
Student Ombuds Office: 403 220-6420 Email: ombuds@ucalgary.ca; <http://ucalgary.ca/provost/students/ombuds>
- (g) **INTERNET and ELECTRONIC COMMUNICATION DEVICE** Information. You can assume that in all classes that you attend, your cell phone should be turned off. 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) 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: _____

CMMB/MDSC 561: Cancer Biology**Course Schedule, Winter 2018**

Location: ST 064, 3:30 – 4:45 pm, Tuesday/Thursday

Coordinators: Dr. Ki-Young Lee, 220-8723

Date	Lecturer	Topic	
Jan	9	K. Lee	Intro to Course
	11	K. Lee	Cell Cycle Control
	16	C. Friedenreich	Cancer Epidemiology & Prevention
	18	R. Johnston	Oncogenes and Signal Transduction
	23	T. Ogilvie	Histopathology of Cancer
	25	K. Lee	Student Presentation
	30	K. Riabowol	Tumor Suppressor Genes and Cancer
Feb	01	D. Derksen	Medicinal Chemistry in Cancer Drug Discovery
	06	S. Rosales	Infectious Disease and Cancer
	08	K. Lee	Student Presentation
	13	L. Galloway	Palliative Care
	15	K. Lee	Student Presentation
	20	Reading Week	No Classes
	22	Reading Week	No Classes
	27	K. Lee	Mid-Term Exam
Mar	01	M. Gallo	Epigenetics and Cancer
	06	K. Lee	Student Presentation
	08	D. Mahoney	Oncolytic Viruses
	13	I. Csizmadi	Diet and Energy Balance in Cancer Prevention
	15	K. Lee	Student Presentation
	20	D. Heng	Treatment of Cancer: Physician's Perspective
	22	K. Riabowol	Mechanisms of Senescence
	27	G. Williams	DNA repair and Cancer
29	D. Senger	Cancer Stem Cells	
Apr	03	F. Jirik	Tumor Immunology (Term paper due in class)
	05	K. Lee	Student Presentation
	10	M. Monument	Transgenic mouse models of pediatric bone and soft tissue sarcomas
	14-25	K. Lee	Final Exam

LEARNING OUTCOMES: By the end of this course, students will be able to understand cancer biology in general including molecular biology of cancer, histopathological characteristics of cancer, incidence, causation and detection, origins and progression and therapeutic approaches such as surgery, radiation and chemotherapy.