

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

# 1. Course: CMMB 567/MDSC 567 – ADVANCED TOPICS IN IMMUNOLOGY

Instructor: <b>I</b>	Dr. Derek McKay	220-7362		dmckay@ucalgary.ca
Lecture Sections: L0	1 TR	1530 - 1645	ST 027A	WINTER 2016

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

2. **PREREQUISITE(S):** CMMB 527 or MDSC 321 or instructor permission

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

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:

Drs. Kubes and Patel:	40% (test = 25%, in class participation = 15%) Feb. 4 In-Class
Dr. von der Weid:	17% (presentation of a research article)
Dr. Newton:	17% ( $7% = 8$ min presentation of a research paper; $10% =$ short answer test)
Dr. McKay:	26% ( $16\% = 4$ page critical essay; $10\%$ in class participation)

There will not be a final exam scheduled by the Registrar's Office.

"Each piece of work (as listed above) 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.3 of the University Calendar

## REGULARLY SCHEDULED CLASSES HAVE PRECEDENCE OVER ANY OUT-OF-CLASS-TIME-ACTIVITY.

- 5. Course Materials: There is no textbook, individual reading and papers will be assigned; some lectures may provide electronic notes and presentations.
- 6. Examination Policy: Standard testing procedure with no aids allowed. Students should also read the Calendar, Section G, on Examinations.
- 7 Writing across the curriculum statement: e.g. "In this course, the quality of the student's writing in research papers and essays will be a factor in the evaluation of those reports." See also <u>Section E.2</u> of the University Calendar.
- 8. 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 <a href="http://www.ucalgary.ca/pubs/calendar/current/sc-5-1.html">http://www.ucalgary.ca/pubs/calendar/current/sc-5-1.html</a> of the on-line calendar.

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

#### 9. 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) 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 (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 <u>http://www.ucalgary.ca/secretariat/privacy</u>.
- (f) Student Union Information: VP Academic Phone: 403 220-3911 Email: <u>suvpaca@ucalgary.ca</u> SU Faculty Rep. Phone: 403 220-3913 Email: <u>science1@su.ucalgary.ca</u>, <u>science2@su.ucalgary.ca</u> and <u>science3@su.ucalgary.ca</u>; Student Ombuds Office: 403 220-6420 Email: <u>ombuds@ucalgary.ca</u>; <u>http://ucalgary.ca/provost/students/ombuds</u>
- (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

M567 co W16; 12/7/2015 9:40 AM

## **PROPOSED COURSE OUTLINE - INTRODUCTION TO IMMUNOLOGY**

 COURSE: CMMB 567 – Advanced Topics in Immunology Winter 2015 Lecture Sections: T, R (2 x 1h 15 min) Location: Main Campus Class Size: min 6 Course Coordinator: Dr. Derek McKay E-mail: <u>dmckay@ucalgary.ca</u>; Tel: 403 220 7362

- 2. COURSE DESCRIPTION: This is an advanced course catering to students with a clear interest in immunology, and those with research interests. The material presented builds on the foundation of basic immunological principles that students will have obtained in CMMB 527, MDSC 321 or an equivalent course. The course is modular and can change/rotate annually. This year instruction is provided by six experts in immunology under the main topics of: (1) innate immunity and immune cell trafficking; (2) structure and function of the lymphatic system; (3) Inflammation and therapeutics in the airways; and (4) mucosal immunity, inflammation and disease.
- 3. **RATIONALE:** This course is designed for motivated students who can work well independently and in groups, with the central goal of illuminating current immunological concepts as they relate to homeostasis, infection and disease. Students are introduced to a variety of teaching styles (lectures, small group discussions and problem-based learning) and, similarly, a variety of evaluation tools are employed (in class tests, in class participation, form presentations, critique of the scientific literature, composition of a critical essay). The student will gain a much fuller understanding of the complexity of immunology signals, cell-cell communication, coordinated responses, immunopathological mechanism, interaction of the immune system with other systems in the body and how this advances our knowledge of the organism and health and disease.
- 4. PREREQUISITES: CMMB 527, MDSC 321 or instructor permission
- 5. 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 (<u>http://www.ucalgary.ca/pubs/calendar/current/f-1.html</u> and <u>http://www.ucalgary.ca/pubs/calendar/current/f-2.html</u>)</u>. For determining the overall grade in the course the following weights will be used:

Drs. Kubes and Patel:	40% (test = 25%, in class participation = 15%)
Dr. von der Weid:	17% (presentation of a research article)
Dr. Newton:	17% (7% = 8 min presentation of a research paper; $10\%$ = short answer test)
Dr. McKay:	26% ( $16% = 4$ page critical essay; $10%$ in class participation)

Grade cut-offs are in %:

A + = 95;	A = 94;	A- = 87
B+=82;	B = 78;	B-=73
C+=69;	C = 64	C-= 59
D+=55	D = 52	F = <49

## 2016

CMMB 567: Advanced Topics In Immunology

Tuesday and Thrusday 15:30-16:45

Room : Science Theatres (ST) 027A

Date		Session	Presentation	Lecturer	Evaluation
12-Jan	Tues	1	Course introduction and overview	D. McKay	
INNATE IMN	MUNE AND IM	MUNE CEL	L TRAFFICING	_	
14-Jan	Thurs	2	Hallmark Features of Inflammation	P. Kubes	
19-Jan	Tues	3	Recruitment of Leukocytes	P. Kubes	
21-Jan	Thurs	4	Ischemia/reperfusion injury - a model of inflammation	P. Kubes	
26-Jan	Tues	5	Chemokines and Cytokines	K. Patel	
28-Jan	Thurs	6	Lipids mediators of inflammation	K. Patel	In class discuss and participation (15%)
2-Feb 4-Feb	Tues	7	Discussion and debate - How to decide if a drug does more harm than good? The story of celebrex.	K. Patel	In Class test (25% (Kubes & Patel))
LYMPH NOD 9-Feb	DE STRCUTURI Tues	E, MUSCOA 8	A ASSOCIATED IMMUNE CELLS AND LYMPHATICS The Lymphatic System, Lymphoid Tissues and Lymphatics	P-Y. von der Weid	
1-Feb	Thurs	9	Mucosal Immunity and Immune Cell Trafficking	P-Y. von der Weid	
16-Feb	Tues		reading week - no class		Student presentation of a
18-Feb	Thurs		reading week - no class		research article chosen from
23-Feb	Tues	10	lecture TBA	P-Y. von der Weid	a proposed selection (17%)
25-Feb	Thurs	11	Journal Club - Student presentations	P-Y. von der Weid	
1-Mar	Tues	12	Journal Club - Student presentations	P-Y. von der Weid	
AIRWAYS IN	FLAMMATION	V		_	
3-Mar	Thurs	13	Introduction. Basic airways physiology and asthma	R. Newton	
8-Mar	Tues	14	Immunology in asthma, COPD and therapeutics	R. Newton	short answer/multiple choice test (10%)
10-Mar	Thurs	15	Mechanisms of anti-inflammatory action by glucocorticoids	R. Newton	8 min presentation of a critique of a
15-Mar	Tue	16	Student presentations	R. Newton	recent clinical or basic science paper (7%)
17-Mar	Thurs	17	Section Q&A (45 min); Assessment: written test (~30 mins)	R. Newton	

#### MUCOSAL IMMUNITY INFLAMMATION & INTESTINAL DISEASE

22-Mar	Tues	18	Gut form & function. Case report objectives	D. McKay	
24-Mar	Thurs	19	Mucosal immunity - players in hypersensitivity, allergy	D. McKay	
29-Mar	Tues	20	Inflammatory bowel disease - immune dysregulation (1)	D. McKay	4 page report on role of a defined
31-March	Thurs	21	Inflammatory bowel disease - immune dysregulation (2)	D. McKay	immune cell in IBD (16%)
5-Apr	Tues	22	Enteric microflora in gut homeostasis and disease	D. McKay	In class participation (10%)
7-Apr	Thurs	23	Enteric parasitic disease - lessons from the worm	D. McKay	
12-April	Tues	24	An integrated response to immunity	D. McKay	