



COURSE INFORMATION SHEET

Biology 430

Immunology

(Tentative course outline for Fall 2011)

Course Description

The course introduces students to the mammalian immune system. Students will be introduced to the key components of the immune system, as well as the processes of the system that recognize and mount an immune response to ultimately eliminate foreign invaders, which include pathogens and organ grafts.

Further Course Information:

Lectures are planned to introduce students to all aspects of the biology of the human immune system. These will be followed by a series of student presentations of case studies to discuss and review what happens when the immune system fails or goes awry. All students are required to attend Bio 430L, which will encompass dry labs and discussions on laboratory techniques most commonly used in Immunology.

Class Schedules

Lectures: A2145. Wednesdays and Fridays, 2:30 – 3:45 pm

Laboratory: A2145. Mondays, 2:00 – 4:30 pm

Instructor Information

Instructor: Dr. Jessmi Ling

Office: A2158

Telephone: 1-403-410-2000 ext. 2919

Email: jling@ambrose.edu

Course objectives:

1. Students will be familiar with cellular and humoral components of the immune system.
2. Students will learn the fundamental processes of the immune system.
3. Students will appreciate the importance of the immune system and its role in immunological diseases.
4. Students will gain experience in critically reviewing papers, as well as presenting case studies in small group discussions.

Prerequisites:

Zoology 263, Biology 231, Biology 241

Required Textbook:

Roitt's Essential Immunology. 12th Edition. Delves PJ, Martin SJ, Burton DR and Roitt IM. 2011. Wiley-Blackwell. West Essex.

Complimentary Textbooks:

Kuby Immunology. 6th Edition. Kindt TJ, Goldsby RA and Osborne BA. 2007. WH Freeman and Co. New York.

Attendance:

There are no penalties for non-attendance of lectures or tutorials, except for presentations, tests and exams.

Tentative course outline:

Date	Topic	Chapter
Sept 7	Course introduction – Overview of the immune system	
Sept 9	Innate immunity I	1 (p.4-17)
Sept 12	<u>Lab 1</u> : Giemsa stain, microscopy and hemacytometer	
Sept 14	Innate immunity II	1 (p.17-32)
Sept 16	Specific acquired immunity	2
Sept 19	<u>Lab 2</u> : Antibody preparation – animal, adjuvant, harvest	
Sept 21	Antibodies I	3 (p.53-68)
Sept 23	Antibodies II	3 (p.68-76)
Sept 26	B-cell and T-cell surface receptors	4 (p.81-95)
Sept 28	Spiritual emphasis days (no classes)	
Sept 30	NK receptors and the major histocompatibility complex	4 (p.95-110)
Oct 3	<u>Lab 3</u> : Agglutination – Immunoprecipitation, Ouchterlony	
Oct 5	Primary interaction with antigen I	5(p.113-126)
Oct 7	Primary interaction with antigen II	5(p.126-137)
Oct 10	Thanksgiving Day (no classes)	
Oct 12	Organs of the immune system I	7(p.188-196)
Oct 14	Organs of the immune system II	7(p.196-203)
Oct 17	Test I (Ch 1 – 5)	
Oct 19	Lymphocyte activation I	8(p.205-216)

Oct 21	Lymphocyte activation II	8(p.216-224)
Oct 24	<u>Lab 4</u> : Immunoblot, dotblot, ELISA	
Oct 26	Effectors of the immune system I	9 (p.227-242)
Oct 28	Effectors of the immune system II	9 (p.243-258)
Oct 31	<u>Lab 5</u> : Immunofluorescence and cell biology.	
Nov 2	Control mechanisms	10
Nov 4	Ontogeny and phylogeny	11
Nov 7	Test II (Ch 7 – 11)	
Nov 9	Adversarial strategies during infections	12
Nov 11	Remembrance Day (no classes)	
Nov 14	Lab: In search of the polio vaccine (Modern Marvels)	Documentary
Nov 16	Vaccines	13
Nov 18	Immunodeficiency	14
Nov 21	Lab 7: Paper discussions I	
Nov 23	Allergy and other hypersensitivities	15
Nov 25	Transplantation	16
Nov 28	Lab 8: Paper discussions II	
Nov 30	Cancer and the immune system	17
Dec 2	Autoimmune diseases	18
Dec 5	Lab 9: Paper discussions III	
Dec 7	Test III (Ch 12 – 18)	
Dec 17	Final exam (A2141; 9 am - noon)	

Mark Distribution:

Tests (2 x 20%, 1 x 5%)	45%
Assignments	20%
Final exam	35%

Assignments:

- Labs 1 – 5 (20 marks each) 100 marks
- Paper discussions 1 – 3 (50 marks each) 150 marks

Tests will consist of short answer questions based on topics covered during lectures. The tests are not cumulative. The higher scores in two of the three tests will each carry 20% of the total course marks. The lowest test score will carry 5% of the total course marks. The final exam will consist of multiple-choice questions, short and long answer questions. Questions will be

based on topics covered during lectures and corresponding chapters from the required textbook. The final exam will cover topics from the whole course (cumulative).

Each laboratory assignment is due two weeks after the laboratory session. Late submissions are penalized 10 marks, and the assignment is not accepted after the fourth week when no mark will be awarded. Students are expected to read papers assigned for paper discussions prior to the lab period as students will be evaluated on the following:

- Preparation for the discussion session (10 marks)
- Participation in the discussion (20 marks)
- Grasp of methods and concepts of the paper (10 marks)
- Comprehensive summary/review of the paper (10 marks)

Grading Scheme:

A+	93 – 100%	C+	66 – 69%
A	87 – 92%	C	62 – 65%
A–	82 – 86%	C–	58 – 61%
B+	78 – 81%	D+	54 – 57%
B	74 – 77%	D	50 – 53%
B–	70 – 73%	F	Below 50%

Important dates:

Registration revision period: Wednesday (September 7) – Sunday (September 18).

Last day to enter course without permission, last day to withdraw from a course, change to audit and receive tuition refund: Sunday (September 18).

Community days (Spiritual emphasis days): Wednesday (September 28) and Thursday (September 29).

Graduation application deadline: Friday (October 14).

Last day to withdraw from courses without academic penalty: Monday (November 14)

Last day to request revised time for a final exam: Monday (November 28).

Last day to apply for time extension for coursework: Monday (November 28).

Please note that final grades will be available on your student portal. Printed grade sheets are no longer mailed out.

Other Syllabus Features:

It is the responsibility of all students to become familiar with and adhere to academic policies as stated in the Student Handbook and Academic Calendar. Personal information, that is information about an individual that may be used to identify that individual, may be collected as a requirement as part of taking this class. Any information collected will only be used and disclosed for the purpose for which the collection was intended. For further information contact the Privacy Compliance Officer at privacy@ambrose.edu.

Although extensions to coursework in the semester are at the discretion of the instructor, students may not turn in coursework for evaluation after the last day of the scheduled final examination period unless they have received permission for a "Course Extension" from the Registrar's Office. Requests for course extensions or alternative examination time must be submitted to the Registrar's Office by the appropriate deadline (as listed in the Academic Calendar <http://www.ambrose.edu/publications/academiccalendar>). Course extensions are only granted for serious issues that arise "due to circumstances beyond the student's control."

We are committed to fostering personal integrity and will not overlook breaches of integrity such as plagiarism and cheating. Plagiarism and cheating can result in a failing grade for an assignment, for the course, or immediate dismissal from the university college. Students are expected to be familiar with the policies in the current Academic Calendar and the Student Handbook that deal with plagiarism, cheating, and the penalties and procedures for dealing with these matters. All cases of academic dishonesty are reported to the Academic Dean.

Students are advised to retain this syllabus for their records.

Course changes, including adding or dropping a course, may be made during the Registration Revision period, as outlined in the Calendar of Events. All course changes must be recorded on a Registration form, available from the Office of the Registrar. Due to circumstances such as class size, prerequisites or academic policy, the submission of a Registration form does not guarantee that a course will be added or removed from a student's registration. Students may change the designation of any class from credit to audit up to the date specified in the Calendar of Events, although students are not entitled to a tuition adjustment or refund after the Registration Revision period.

Withdrawal from courses after the Registration Revision period will not be eligible for tuition refund. Students intending to withdraw from some or all of their courses must submit a completed Registration form to the Registrar's office. The dates by which students may voluntarily withdraw from a course without penalty are listed in the Calendar of Events. A grade of 'W' will be recorded on the student's transcript for any withdrawals from courses made after the end of the Registration Revision period and before the Withdrawal Deadline (also listed in the Calendar of Events). 'W' grades are not included in grade point average calculations. A limit on the number of courses from which Academic a student is permitted to withdraw may be imposed. Students wishing to withdraw from a course, but who fail to do so by the applicable date, will receive the grade earned in accordance with the course syllabus. A student obliged to withdraw from a course after the Withdrawal Deadline because of health or other reasons may apply to the Registrar for special consideration.

An appeal for change of grade on any course work must be made to the course instructor within one week of receiving notification of the grade. An appeal for change of final grade must be submitted to the Office of the Registrar in writing within 30 days of receiving notification of the final grade, providing the basis for appeal. A review fee of \$50.00 must accompany the appeal to review final grades. If the appeal is sustained, the fee will be refunded.

Academic dishonesty is taken seriously at Ambrose University College as it undermines our academic standards and affects the integrity of each member of our learning community. Any attempt to obtain credit for academic work through fraudulent, deceptive, or dishonest means is academic dishonesty. Plagiarism involves presenting someone else's ideas, words, or work as one's own. Plagiarism is fraud and theft, but plagiarism can also occur by accident when a student fails or forgets to give credit to another person's ideas or words. Plagiarism and cheating can result in a failing grade for an assignment, for the course, or immediate dismissal from Ambrose. Students are expected to be familiar with the policy statements in the current academic calendar and the student handbook that deal with plagiarism, cheating, and the penalties and procedures for dealing with these matters. All cases of academic dishonesty are reported to the Academic Dean and become part of the student's permanent record.