

Biology 365
Topics in Immunology
Fall, 2003
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Syllabus

This course has been designed to provide a general introduction to immunology. Immunology has matured over the last 20 years from a descriptive science to a discipline that is now well understood at the molecular level. The tools of modern biochemistry and molecular biology enabled this change to occur. Now it is clear that the converse situation is also occurring in that techniques developed through an understanding of immunology are being widely used to study fundamental problems in biochemistry, cellular and molecular biology, and developmental biology. A basic understanding of immunology has become increasingly important for a biologist in any discipline.

The major topics to be considered in this course include the mechanisms of the humoral and cell-mediated immune responses in vertebrates, the properties of immune products such as immunoglobulins and cytokines, and the interaction and regulation of the components of the immune system. Numerous clinical applications will be addressed. An emphasis will be placed on the experimental basis of the field. Students will become familiar with some of the techniques currently important in immunology research, the type of data immunologists can obtain, and the way such data can be interpreted by reading selected papers from the primary literature.

Cell Biology (Bio 447) is a prerequisite for this course.

Any student who believes s/he has a learning or other disability should see me as soon as possible so that appropriate accommodations can be made.

Appointments: I am pleased to meet with you at any mutually convenient time to discuss aspects of immunology or other issues. I do not have regular office hours in Dow because of my responsibilities in the Provost's Office, so please email me to make an appointment if you would like to meet for a longer time. It is helpful if you indicate several times that you could be available.

Lectures: The class will meet at 2:40 p.m. on Monday, Wednesday, and Friday for lectures and discussions covering the major concepts of immunology and practical applications. The Friday block will be used most often for class presentations and discussion of selected readings from the literature in a journal club format. I will meet with each journal club group to provide background information and assist in planning prior to the presentation.

Text: The primary text used in this course is Immunology, 5th Ed. by Richard A. Goldsby, Thomas J. Kindt, Barbara Osborne, and Janis Kuby (2003). The breadth of coverage and the clarity of presentation in this text are both excellent and the text has an emphasis on the experimental method. In addition, a set of recent review articles drawn from the journals *Cell* and *Trends in Immunology* will provide the basis for our journal club discussions.

Evaluations: Grades will be determined on the basis of the following components. Three exams covering lecture material, text readings, and paper presentations will be given during the term. Two exams are scheduled as evening exams during Weeks 5 and 9, and the third exam is scheduled during finals week. A term paper (8-10 pgs.) on a topic of the student's choice will be due Week 8. Another major component of the course includes the student paper presentations and discussions each week during the journal club. The distribution of points will be as follows:

Midterm Exam I (Mon., Oct. 20)	200 pts.
Midterm Exam II (Mon., Nov. 17)	200 pts.
Exam III (Finals Week)	150 pts.
Term Paper	
Bibliography (due Mon., Oct. 27)	25 pts.
Paper (due Mon., Nov. 10)	150 pts.
Short Presentation of Term Paper	25 pts.
Paper Presentations/Discussions	250 pts.
Two papers @ 125 points each (100 pts. for individual presentation and 25 pts. for group presentation.)	
Total	<hr/> 1000 pts.

Lecture Schedule

<u>Week</u>	<u>Date</u>	<u>Topic</u>	<u>Reading</u>
1	9/22	M Overview of Immunology	Ch 1
	9/24	W Cells and Organs of the Immune System I	Ch 2
	9/26	F Cells and Organs of the Immune System II	
2	9/29	M AIDS	Ch 19
	10/1	W Antigens	Ch 3
	10/3	F Journal Club: <i>DC-SIGN: A Guide to Some Mysteries of Dendritic Cells</i>	
3	10/6	M Immunoglobulins	Ch 4
	10/8	W The Genetic Basis of Ab Diversity	Ch 5
	10/10	F Journal Club: <i>New Insights into Host Factors in HIV-1 Pathogenesis</i>	
4	10/13	M Major Histocompatibility Complex	Ch 7
	10/15	W Antigen Processing	Ch 8
	10/17	F Journal Club: <i>RANTES: A Versatile and Controversial Chemokine</i>	
5	10/20	M T Cell Receptor Exam I	Ch 9
	10/22	W T Cell Development	Ch 10
	10/24	F Meeting with Reference Librarians	
6	10/27	M B Cell Maturation Bibliography Due	Ch 11
	10/29	W Cytokines	Ch 12
	10/31	F Journal Club: <i>Death by Deamination: A Novel Host Restriction System for HIV-1</i>	
7	11/3	M The Complement System	Ch 13
	11/5	W Cell-Mediated Effectors	Ch 14
	11/7	F Journal Club: <i>Structured Treatment Interruptions to Control HIV-1 and Limit Drug Exposure</i>	
8	11/10	M Inflammation Paper Due	Ch 15
	11/12	W Hypersensitivity	Ch 16
	11/14	F Journal Club: <i>The HIV Vaccine Race</i>	
9	11/17	M Infectious Diseases and Vaccines Exam II	Ch 17-18
	11/19	W Autoimmune Diseases	Ch 20
	11/21	F Share results of term papers	
10	11/23	Sun Special Event: THANKSGIVING DINNER	
	11/24	M Transplantation Immunology	Ch 21
	11/26	W Tumor Immunology	Ch 22
	11/28	F HOLIDAY	