

Immunity and Disease

This class will provide students with the fundamentals of immunology to better understand current topics in infections, immunological diseases and public health. We will learn how the immune system works to prevent, resolve, or exacerbate disease. A general overview of the immune system (including cell types and functions) will be covered in the beginning in order to demonstrate how immunology research examines the mechanisms of disease in order to prevent infections and illness. We will spend the last two-thirds of the class focusing on specific diseases with immunology relevance.

You will not receive credit for this class if you have previously taken MCB100A or MCB102!
However, you can receive credit for MCB100A or MCB102 or MCB150 after taking this class.

Instructor: Robert Beatty, Ph.D.
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Office Hour:

642-0671

Fridays 2-3 pm 176 LSA

Section attendance: Sections will alternate between class review and discussion articles. There is a short reader for this class containing 6 different discussion articles covering various topics.

Attendance in section is required for discussion and poster presentation meetings.

The discussion articles are to be read prior to section. Participation in these discussions will be part of your grade. Each set of questions on each discussion paper is worth 10 points. These questions are to be done IN SECTION and handed in at the end of section. There is a reader that includes lecture outlines for the entire semester.

Presentations

Students will be required to work on a poster describing an important vaccine issue for infectious diseases primarily found of humans. Presentations will be done in groups of 4-5 and will be presented during discussion sections in April. A list of potential presentation topics will be provided.

Text: There is no required textbook for this class. The following books can be used as resources.

Immunology at a Glance by Playfair and Chain. 10th edition,
"Review of medical microbiology and Immunology" Levinson. 11th edition.

Exams/Grading:

Midterm examinations will be given during class time and the final examination will be given at the scheduled time during exam week. The questions will be multiple choice, matching, short answer and long answer. Grades will be awarded based on a curve.

iClicker points	30 points
Discussion questions in section	50 points
Midterm I	100 points
Midterm II	100 points
Poster presentation on vaccines	70 points
Final Exam	150 points
<hr/> Total	<hr/> 500 points

MCB 50 Sp 2014 Class Lecture Schedule

Day	Date	Class mtg	Topic
Wed	1/22	1	Introduction. Cell biology review.
Fri	1/24	2	Introduction to the immune system
Mon	1/27	3	Inflammation, neutrophils and macrophages
Wed	1/29	4	Adaptive immunity: Antigens and antibodies
Fri	1/31	5	Adaptive immunity: Antigens and antibodies
Mon	2/3	6	Adaptive immunity: B cells
Wed	2/5	7	Adaptive immunity: T cells
Fri	2/7	8	Adaptive immunity: T cells
Mon	2/10	9	Adaptive immunity: Major Histocompatibility.
Wed	2/12	10	Adaptive immunity: Major Histocompatibility
Fri	2/14	11	Host-Pathogen Relationship
Mon	2/17		NO CLASS President's Day
Wed	2/19	12	Antigen Processing and Presentation
Fri	2/21	13	Viruses: Diseases caused by viruses
Mon	2/24	14	Viruses: Immune responses to viruses
Wed	2/26		Exam Review
Fri	2/28		MIDTERM I
Mon	3/3	15	Bacteria: Introduction to Bacteria
Wed	3/5	16	Immune responses to bacteria. Bacterial disease example: Streptococcus
Fri	3/7	17	Immune responses to bacteria. Bacterial disease example: Anthrax
Mon	3/10	18	Guest lecture: "Prions" Professor Kurt Giles, UCSF
Wed	3/12	19	Vaccines: How vaccines work
Fri	3/14	20	Vaccines: Types of vaccines

Mon	3/17	21	Protozoan Parasites: Malaria, Leishmania
Wed	3/19	22	Immune responses to protozoan and parasitic worms
Fri	3/21	23	Parasitic Worms: Ascaris, Tapeworms, Schistosomes
	3/24-28		SPRING BREAK
Mon	3/31	24	HIV: Life cycle and epidemiology
Wed	4/2	25	HIV: Immune responses
Fri	4/4		Midterm II Exam review
Mon	4/6		MIDTERM II
Wed	4/9	26	Type I Hypersensitivity. Allergy
Fri	4/11	27	Delayed type hypersensitivity: Poison Oak Reaction
Mon	4/14	28	Organ Transplants. Clinical aspects. Immunosuppressive drugs.
Wed	4/16	29	Guest lecture: "Renal Transplant and Transplant Immunosuppression" Dr. Peter Bretan, Marin Sonoma Urology Associates
Fri	4/18	30	Stress and the immune system: Neuropeptides, corticosteroids.
Mon	4/21	31	Cancer: The initiation of cancer
Wed	4/23	32	Cancer: Immune response to tumors
Fri	4/25	33	Guest lecture: "Therapeutic Monoclonal Antibodies" Dr. Larry Kauver, Trellis Bioscience
Mon	4/28	34	Autoimmunity: How the immune system attacks self
Wed	4/30	35	Autoimmunity: Antibody mediated autoimmune diseases: systemic lupus erythematosus, rheumatoid arthritis.
Fri	5/2	36	Autoimmunity: T cell mediated diseases: diabetes, multiple sclerosis
Fri	5/9		Review for exam In same classroom

Tuesday May 13

3- 6 pm

FINAL EXAM

Location TBA