IMMUNOLOGY (IMUN)

IMUN 506 Immune Mechanisms
This is an introductory graduate course which surveys most areas of immunology. It is assumed that students have a background in biochemistry and molecular biology, and at least some familiarity with immunological concepts. Topics covered include the major histocompatibility complex, structure of antibodies and T cell receptors, antigen-antibody interactions, the generation of diversity of immunoglobulins and B cells, antigen presentation, and immunological tolerance. There will be two exams, both of which will require assessment and interpretation of experimental data and/or readings from the primary literature.
Taught by: Michael May
Course usually offered in fall term
Prerequisite: Permission of instructor
Activity: Lecture
1.0 Course Unit
Notes: 4 h. 1 c.u. Monday/Wednesday/Friday

IMUN 507 Immunopathology
The relationship between basic immunology and clinical immunologic diseases is emphasized. Course lecturers represent University faculty who are established investigators in immunological research and established clinical immunologists. Course topics include plasma protein systems; B cell, T cell, macrophage immunology; immunohematology; tumor immunology; benign and malignant, immunoproliferative disorders; neuro-immunology; pulmonary immunology; renal immunology; immune complex disease and immunoregulatory abnormalities.
Taught by: Michael May and Erica Stone
Course usually offered in fall term
Prerequisites: IMUN 506 and permission of instructor
Activity: Lecture
1.0 Course Unit
Notes: 2 h. 1 c.u. Tuesday/Thursday

IMUN 520 Tutorials in Immunology
This tutorial course is designed to provide students with an in-depth knowledge of a specific branch of Immunology. The tutorial can be used to enable students to become more deeply acquainted with the literature related to their thesis projects or to expand on a topic that the student found interesting in one of their basic courses. The course is currently the only immunology elective and is, therefore, required for all Immunology Graduate Group students. It is also open as an elective to BGS students who meet the prerequisite. The tutorial course will be examined by the program director and the tutorial leader and the grade will be based on a written paper on the subject studied (5 to 10 typewritten pages) and by an oral presentation of the paper (15 to 20 minutes).
Taught by: Randy Cron, M.D., Ph.D.
Course usually offered in fall term
Prerequisites: A senior undergraduate, graduate or professional school course in Immunology.
Activity: Seminar
1.0 Course Unit

IMUN 599 Immunology Faculty Research Seminar
Mandatory attendance at weekly research presentations by graduate group faculty.
Taught by: Laura Su and Gregory Beatty
One-term course offered either term
Prerequisite: Permission of Graduate Group Chair
Activity: Seminar
0.5 Course Units

IMUN 601 Molecular Immunology
The purpose of this course is to provide examples in which the cell biology topics covered in BIOM 600 are studied in the context of immune cells or used to explain immune system function. This course will help students become proficient at reading and critically assessing the published literature and encourage students to actively participate in scientific discussion with their peers.
Taught by: Drs. Paula Oliver and Jan Burkhardt
Course not offered every year
Activity: Lecture
0.5 Course Units

IMUN 607 Grant Writing
This course will introduce the student to basic principles of grant writing. In this regard a primary objective of the course is to teach you how to describe your ideas and experimental objectives in a clear and concise manner within the standard NIH grant format. To accomplish this, you will be required to write an NIH, "RO1" type grant proposal based on your current laboratory project.
Taught by: Andrew Wells, Bruce Freedman, Michael Cancro
Course usually offered in spring term
Prerequisite: IMUN 506/507 and/or permission of instructor
Activity: Seminar
1.0 Course Unit
IMUN 609 Vaccines and Immune Therapeutics
The goal of the Vaccines course is to expand on student's general understanding of the immune system and to focus this understanding towards the application of vaccination. Furthermore, the course will give the student a sense of how these principles are applied to vaccine and immune therapeutic development. The course covers basic science as well as the Clinical, Ethical & Political implications of Modern Vaccines. Initial lectures will review immune mechanisms believed to be responsible for vaccine induced protection from disease. Subsequent lectures build on this background to explore the science of vaccines for diverse pathogens, including agents of bioterrorism as well as vaccines for cancer. An appreciation for the application of laboratory science to the clinical development of vaccines is provided in the next section of the course along with lectures that focus on the ethical implications of vaccines in different situations. The financial implications of specific vaccines and their impact on the global community, is a specific focus of the course. The course is lecture style and will have a required reading list prepared in advance to provide the students background for the specific topic. Students will be graded by course participation as well as by a final written exam. The course is intended for graduate students or Medical Students in various MS, Ph.D. or MD/Ph.D. programs on the campus as well as local scientists and professionals in the community. As a prerequisite, students should have taken biology, biochemistry or immunology courses at the advanced college level. A final project will be graded from all students. The final project is to propose in a written report a vaccine strategy for a current pathogen of importance that does not as yet have an effective vaccine. Strategies used should build on the material presented in the class lectures. The details of the final paper will be further discussed in class.

Taught by: David Weiner, Ph.D., and Paul Offit, M.D.
Course usually offered in fall term
Also Offered As: CAMB 609
Prerequisites: The course is intended for graduate students or Medical Students in various MS, Ph.D. or MD/Ph.D. programs on the campus as well as local scientists and professionals in the community. As a prerequisite, students should have taken biology, biochemistry or immunology courses at the advanced college level.
Activity: Lecture
1.0 Course Unit

IMUN 699 Laboratory Rotation
Laboratory research conducted under a faculty advisor. Three different rotations covering usually the fall semester of the first year through the fall semester of the second year are required of all Immunology Ph.D. students. Students will defend the rotation research in their Preliminary Exams.

Taught by: Immunology Graduate Group Faculty
One-term course offered either term
Prerequisites: Permission of instructor and immunology chair.
Activity: Laboratory
1.0 Course Unit

IMUN 799 Independent Study
Activity: Independent Study
1.0 Course Unit

IMUN 899 Pre-Dissertation Lab
Activity: Laboratory
1.0 Course Unit

IMUN 995 Dissertation
Activity: Dissertation
1.0 Course Unit