



BIO 399: Special Topics

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Course Description

Special topics: Immunology – A short course.

This course is a brief overview of the immune system, with a focus on the role of the Major Histocompatibility Complex (MHC) in directing immune responses. At the successful completion of the course, students will be able to use appropriate terminology and explain fundamental aspects of the development, structure, function and regulation of the human immune system, differentiating between the innate and adaptive mechanisms of host defense against “not-self”. The course will illustrate the basic principles of immunization and key characteristics of immunopathology caused by allergies and other hypersensitivities, primary or acquired immunodeficiency, autoimmunity, transplantation and the immune response to cancer. The course will include lectures, small group activities, case studies, peer-to-peer teaching and an excursion. The course is an introductory overview and not intended for students who have previously taken an immunology course.

Learning Objectives

At the successful completion of the course, students will be able to:

- 1) Explain the development, structure, function, and regulation of the immune system at molecular and cellular levels, and differentiate between the innate and adaptive mechanisms of host defense.
- 2) Describe the key characteristics of primary and acquired immunodeficiencies, analyse the mechanisms of the defects, and examine the clinical consequences and infectious organisms associated with these disorders.
- 3) Identify and explain the pathophysiology of allergies and other hypersensitivities, autoimmunity, transplantation, and immune responses to cancer.
- 4) Illustrate the basic principles of immunization, vaccine safety and vaccine hesitancy.
- 5) Explain how issues of geography, economics, culture, and public health affect delivery of immune-based treatments.
- 6) Identify gaps in your understanding of the immune system, identify and evaluate resources to help close these gaps, and articulate the information to your peers.
- 7) Behave in a professional manner and carry out any responsibilities in this course with the highest levels of integrity.

Assessment and Grading Criteria

- (2) quizzes ~ 10-15 points each
- Participation in active learning sessions ~ 5 points
- (1) case study presentation ~ 10 points
- (1) comprehensive exam ~ 65 points
- 100 total points