

# INFECTIOUS DISEASE AND IMMUNOLOGY (IDIM)

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## **IDIM 400 Infections and Immunology (3 Credit Hours)**

IDIM 400 integrates basic knowledge of infectious microorganisms with an understanding of innate and adaptive immune systems that react against them. Following a review of infections caused by specific infectious organisms, IDIM 400 will focus on specific aspects of immune systems and how they interact to remove these infectious microorganisms.

*Outcomes:*

1) Explain the cellular basis of immune development; 2) Differentiate between the mechanisms of activation of immune systems; 3) Analyze the mechanisms involved in combating bacterial and viral infections

## **IDIM 401 Conceptual Bases of Infectious Diseases (2 Credit Hours)**

IDIM 401 integrates a basic science understanding of microorganisms with an understanding of their role in human health. Following a review of bacterial physiology and gene expression, the focus will be on bacterial disease, including basic strategies used to cause disease and details of pathogenesis by medically important bacterial pathogens.

*Outcomes:*

1) Describe differences between bacteria and eukaryotes; 2) Understand mechanisms by which bacteria cause disease; 3) Understand limitations of current antimicrobial therapies; 4) Differentiate between similar diseases with different causes

## **IDIM 403 Parasitology and Virology (2 Credit Hours)**

*Pre-requisites:* IDIM 400

The Parasitology and Virology course IDIM 403 is designed to describe infections caused by microorganisms and animal diseases transmissible to man, with a primary focus on parasites and viruses. We will emphasize the pathophysiology of these diseases in humans of various ages. This course will promote an understanding of how the properties of certain infectious agents can in some cases avoid an adequate immune response.

*Outcomes:*

1) Explain the mechanisms of pathogenicity of various infectious agents; 2) Analyze the mechanisms by which emerging viruses arise; 3) Apply knowledge to viral vaccine development

## **IDIM 418 Presentation skills (1 Credit Hour)**

Scientists must communicate their work in numerous venues, from giving oral presentations in seminars and conferences to writing papers and grant proposals. This course is designed to train students in the design and delivery of effective oral presentations, a skill that can be readily adapted to serve as a starting point for written communications.

*Course equivalencies:* IDIM418/BMSC418

*Outcomes:*

1) Identify elements of an effective oral presentation; 2) Deliver an effective oral presentation; 3) Judge the effectiveness of oral presentations

## **IDIM 492 Research (1-8 Credit Hours)**

A major component of the M.S. degree in Infectious Disease and Immunology is the successful completion of a research project integrating basic and clinical science. IDIM 492 is designed to give credit for the research efforts that will result in the Master's thesis.

## **IDIM 501 Seminar (1 Credit Hour)**

IDIM 501 is designed to help students stay abreast of current topics in infectious disease and immunology. Students will attend weekly seminars and are encouraged to interact with invited seminar speakers by asking questions and contributing to group discussions. Upon completion students will have enhanced their understanding of current research.

*Outcomes:*

1) Describe the results or conclusions from a given seminar presentation; 2) Understand how research is advancing knowledge in a given field covered by a representative seminar; 3) Question new data or their interpretation

## **IDIM 502 Special Topics in Infectious Disease and Immunology (5 Credit Hours)**

IDIM is designed to immerse students in current literature, with new topics chosen each year. Students will read the primary literature and participate in discussion sessions. The course will enhance the ability of the student to critically read and interpret scientific literature in infectious disease and immunology.

*Outcomes:*

1) Critically read and discuss scientific literature in the area covered by the course; 2) Discuss experimental approaches, their limitations, and the conclusions that can be drawn from observed results

## **IDIM 595 Thesis Supervision (0 Credit Hours)**

A major component of the M.S. degree in Infectious Disease and Immunology is the successful completion of a research project integrating basic and clinical science. This course is similar to IDIM 492, except that students are expected to perform at an advanced level in all aspects.

*Outcomes:*

Students will 1) Understand the significance and clearly communicate the research problem; 2) Describe the approaches used and results obtained; 3) Draw conclusions and identify future directions