

Minnesota State University Moorhead

BIOL 430: Immunobiology

A. COURSE DESCRIPTION

Credits: 4

Lecture Hours/Week: 4

Lab Hours/Week: 0

OJT Hours/Week: *.*

Prerequisites:

This course requires any of these three prerequisite categories

1. BIOL 350 - Microbiology

Or

2. BIOL 438 - Medical Microbiology

Or

3. Both of these

BIOL 236 - Foundations of Microbiology w/Lab

BIOL 341 - Genetics

Corequisites: None

MnTC Goals: None

Covers the components and functioning of the immune system: emphasizes the immune system at the organismal level as well as the cellular and molecular levels. Listed prerequisites may be waived by consent of instructor.

B. COURSE EFFECTIVE DATES: 10/02/2020 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Elements of the Immune System and their Roles in Defense
2. Innate Immunity
3. Principles of Adaptive Immunity
4. Antibody Structure and the Generation of B-Cell Diversity
5. Antigen Recognition by T Lymphocytes
6. The Development of B Lymphocytes
7. The Development of T Lymphocytes
8. T Cell-Mediated Immunity
9. Immunity Mediated by B Cells and Antibodies
10. The Body's Defenses Against Infection
11. Failures of the Body's Defenses
12. Over-reactions of the Immune System
13. Disruption of Healthy Tissue by the Immune Response
14. Vaccination to Prevent Infectious Disease
15. Transplantation of Tissues and Organs
16. Cancer and Its Interactions with the Immune System

D. LEARNING OUTCOMES (General)

1. To provide students with information, guidance and assistance in understanding the human immune system.
2. To recognize the similarities and differences between innate and adaptive immunity.
3. To identify and define the functions of the key soluble, cellular and organ components of the immune system.
4. To probe the underlying mechanisms and principles of immune system function and dysfunction as they relate to health and disease states.
5. To use those principles to understand the cause of immunological disease and the basis of immunoprophylaxis and immunotherapy,
6. To provide students with the opportunity to collect, organize and communicate technical scientific information related to the immune response system, in a variety of professional formats, extending their verbal and written communication skills.

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

None

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

None noted