

Virginia Western Community College

MDL 215

Immunology

Prerequisites

Successful completion of BIO 101 and BIO 141 or equivalent.

Course Description

Presents the physiological basis of humoral and cell mediated immunity, including the medical and clinical laboratory application of immunological principles.

.Semester Credits: 2

Lecture Hours: 2

Lab/Clinical/Internship Hours:

Required Materials

Textbook:

Contemporary Clinical Immunology and Serology. Kate Rittenhouse-Olson and Ernesto Denardin. Pearson, 2013. ISBN: 9780135104248

Other Required Materials:

Course Outcomes

At the completion of this course, the student should be able to:

- Correctly define, spell, pronounce and have an understanding of the terminology used in Immunology and Serology, to include the lymphoid system, immunological reactions, autoimmunity, hypersensitivity, and basic theories of vaccination, transplantation, tolerance, and infectious disease.
- Apply knowledge from beginning chapters to understand the principles and methodologies of different assays, which are currently and routinely used in modern clinical immunology laboratories.
- Understand principles and use mathematical calculations and formulas for various assays.
- Define, describe and discuss the serology of noninfectious clinical disorders to include allergy and hypersensitivity, autoimmunity, tumors, hematologic malignancies, transplantation immunology, and primary immunodeficiency disease.
- Define, describe and discuss the serology of infectious clinical disorders to include acquired immunodeficiencies, viral diseases, bacterial diseases, and fungal and parasitic diseases.
- Understand and discuss the role of the clinical immunology laboratory in the diagnosis of disease.

Topical Description

Part 1: The System and Components

- Introduction to Immunology
- Antibody
- Antigens, Epitopes, and Immunogenicity
- Cellular Immunity
- Complement

Part 2: The Assays

- Agglutination and Precipitation Reactions: The Unlabeled Immunoassays
- Labeled Immunoassays
- Serology Laboratory Math

Part 3: SEROLOGY OF NONINFECTIOUS CLINICAL DISORDERS

- Hypersensitivity Reactions
- Systemic Autoimmunity
- Organ- and Tissue-Specific Autoimmunity
- Tumor Immunology
- Immunoproliferative Diseases
- Immunology of Transplantation
- Primary Immunodeficiency Diseases The Red Blood Cell Membrane

Part 4: Serology of Infectious Clinical Disorders

- Acquired Immunodeficiency
- Hepatitis
- Herpesviridae Family and Other Serologically Diagnosed Viruses
- Bacterial Serology
- Fungi and Parasites

Part 5: Miscellaneous Related Information

- Forensic Serology
- Basic Laboratory Safety
- Molecular Biology Techniques

Note to Instructors