

Virginia Western Community College

MDL 215 Immunology

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COURSE OUTLINE

Prerequisites:

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.

Lecture: Tu, Th 3:00-3:50PM (Fralin HP410)

Semester Credits: 2 Lecture Hours: 2 Lab/Recitation Hours: NA

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.

Required Materials:

Textbook:

Contemporary Clinical Immunology and Serology, by Kate Rittenhouse-Olson and Ernesto Denardin. Pearson, 2013.
ISBN-13:978-0-13-510424-8

Topics

PART 1. THE SYSTEM AND COMPONENTS

1. Introduction to Immunology
2. Antibody
3. Antigens, Epitopes, and Immunogenicity
4. Cellular Immunity
5. Complement

Test Part 1

PART 2. THE ASSAYS

6. Agglutination and Precipitation Reactions: The Unlabeled Immunoassays
7. Labeled Immunoassays
8. Serology Laboratory Math

Test Part 2

PART 3. SEROLOGY OF NONINFECTIOUS CLINICAL DISORDERS

9. Hypersensitivity Reactions
10. Systemic Autoimmunity
11. Organ- and Tissue-Specific Autoimmunity
12. Tumor Immunology
13. Immunoproliferative Diseases
14. Immunology of Transplantation
15. Primary Immunodeficiency Diseases

Test Part 3

PART 4. SEROLOGY OF INFECTIOUS CLINICAL DISORDERS

16. Acquired Immunodeficiency
17. Hepatitis
18. Herpesviridae Family and Other Serologically Diagnosed Viruses
19. Bacterial Serology
20. Fungi and Parasites

Test Part 4

PART 5. MISCELLANEOUS RELATED INFORMATION

21. Forensic Serology
22. Basic Laboratory Safety
23. Molecular Biology Techniques

Final Exam (Parts 1-5; Chapters 1-23)

- There will be chapter quizzes announced in lecture class or unannounced
- Exam dates are tentative, and are subject to change
- Comprehensive questions on the final exam will be culled from past quizzes and exams from the semester.