

Course Objectives:

The objectives of the course are:-

1. To provide the knowledge about the components and role of the immune system.
2. To provide students with knowledge of different mechanisms of the immune system.
3. The students will be able to describe immunological response and how it is triggered and regulated.
4. To describe the roles of the immune system in both maintaining health and contributing to diseases.

Course learning outcomes:

Upon successful completion of the course, the student will be able to:

1. **Explore** the basic knowledge of the mechanisms of immune system
2. **Describe** the concepts about the role of immune system.
3. **Interpret** the problems using immunological techniques for diagnosis of immune disorders.
4. **Identify** the problems using immunological diagnostic tools.
5. **Detect** the problems using the same techniques for other disorders.
6. **DEMONSTRATE** individually the ELISA and other Assays/Tests.

Course Contents:

Overview of the immune system Historical perspective, innate and acquired immunity. Cells and organs of immune systems Hematopoiesis, lymphoid cells, Mononuclear cells Dendritic cells, primary lymphoid organs, leukocyte recirculations. Antigens; immunologic properties of Antigens factors affecting antigenicity, epitopes, Heptend, and study of antigenicity, ucal and bacterial antigens, milogens. Immunoglobulin structure and function basics structure, sequencing studies, fine structure, receptor complex, Antigenic determinants, Isotype and super family. Antigen antibody interactions strength, cross reactivity, precipitant, agglutination reaction RIA and ELISA, western blotting, immuno-fluorescence. Organization and expression of immunoglobulin genes genetic model compatible with immunoglobulin structure. Multigene organization of Ig genes variable region rearrangement, regulation of Ig gene transcription, generation of Ab diversity, class switching among constant region genes. Expression of Ig genes.

Teaching-Learning Strategies

Teaching will be a combination of class lectures, class discussions, and group work. Short videos /films will be shown on occasion.

Assignments

The sessional work will be a combination of written assignments, class quizzes, presentation, and class participation/attendance.

Assessments and Examination

Sessional Work:	25 marks
Midterm Exam:	35 marks
Final term Exam:	40 marks

Books Recommended:

1. KUBY'S IMMUNOLOGY, 2000. 4th ed. Richard, A., Goldsby, Thomas, J. Kindt and Barbara, A. Osborn. W.H. Freeman and Company, New York.
2. CELLULAR AND MOLECULAR IMMUNOLOGY, 1994. 2nd ed. Abbas Lichtman and Pober, W.B. Saunders Co.

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Course Contents:

Detection of Ab. Primary immune response. Secondary immune response. Demonstration of Ab specificity. Estimation of antibodies. Separation of various types of immunoglobulins.

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