Name of the Programme: M. Sc. Zoology

Course Code: ZOO-621 **Title of the Course:** Immunology

Number of Credits: 02

Effective from AY: 2023-24

Pre-requisites for the Course:	Fundamental knowledge of Cell biology	
Course Objectives:	1. To explain advanced mechanisms of immunity. 2. To explicate the scope and importance of clinical immunology. 3. To impart a conceptual understanding of the functional organization of the immune system and its responsiveness to health and disease	
Content:	**Module 1** An overview of immune system, Cells of immune system, Primary and secondary lymphoid organs and their role in immunity. Concept of innate and acquired- types, functional features. Concept of Antigens, Immunogen, antigenicity and immunogenicity**,** Adjuvants (definition, types and applications). Antibody structure and types. Generation of antibody diversity. **Module 2** Cellular Immune System**-**Lymphocytes: Development, types, morphology, clones / sub-populations, distribution, B and T cell receptors, B and T cell epitopes, Toll-like receptors. Antigen-presenting cells: antigen processing and presentation, MHC molecules and their immunologic significance. Complement system Components, three major activation pathways,	5 hours 5 hours 5 hours 5 hours 5 hours 5 hours
Pedagogy:	Mini Projects, Group activities, Demonstrations	
References/ Readings:	1. T. J. Kindt, R.A. Goldbye, B.A. Osborne, Kuby's Immunology. W.H. Freeman Company, 2007. 2. C. A. Janeway, Immunobiology: The Immune System in Health and	

	Diseases. Garland Science, 2005. 3. P. Delves, S. Martin, D. Burton, I. Roitt, Roitt's Essential Immunology. Wiley-Blackwell, 2006. 4. A. K. Abbas, A. H. Lichtman, and S. Pillai, Cellular and Molecular Immunology. Elsevier, USA, 2008. 5. J. M. Willey, C. J. Woolverton, and L. M. Sherwood, Klein's Microbiology Publisher: McGraw-Hill, 2009.
Course Outcomes:	The learner will 1. Distinguish between various types of immune cells. 2. Predict the involvement of various immune mechanisms after infection. 3. Evaluate the progression of immunological processes after infection. 4. Validate and propose the immunological response after infection.

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