

**Programme:** M. Sc. (Zoology)

**Course Code:** ZOO-406

**Number of Credits:** 2

**Effective from AY:** 2018-19

**Title of the Course:** Immunology

<b><u>Prerequisites for the course:</u></b>	Basic knowledge on cell biology.	
<b><u>Objective:</u></b>	This course provides broad foundation base for understanding the defence mechanisms of the human body and also cross disciplinary approach to immune mechanisms focusing on cellular and molecular mechanisms in immunology, inflammation and infection.	
<b><u>Content:</u></b>	<b>Module 1:</b> Cells and molecules involved in innate and adaptive immunity, antigens, antigenicity and immunogenicity. B and T cell epitopes, structure and function of antibody molecules. Generation of antibody diversity, monoclonal antibodies, antibody engineering.	12 hours
	<b>Module 2:</b> Antigen-antibody interactions, MHC molecules, antigen processing and presentation, activation and differentiation of B and T cells, B and T cell receptors, humoral and cellmediated immune responses, primary and secondary immune modulation, the complement system, Toll-like receptors, cell-mediated effector functions, inflammation, hypersensitivity and autoimmunity, immune response during bacterial (tuberculosis), parasitic (malaria) and viral (HIV) infections, congenital and acquired immunodeficiencies, vaccines.	12 hours
<b><u>Pedagogy:</u></b>	Lectures/ tutorials/assignments/self-study	
<b><u>References/Readings</u></b>	<ol style="list-style-type: none"><li>1. Abbas AK, Litchman AHH and Pillai S, Cellular and Molecular Immunology, W. B. Saunders Co., Philadelphia.</li><li>2. Berrette JT, Textbook of Immunology, C. V. Mosby &amp; Co., USA</li><li>3. Boyd C, Fundamentals of Immunology, Inter Science Publ. NY Carpenter PL, Immunology and Serology, W. B. Saunders Corp. Philadelphia</li><li>4. Latha PM , Text Book of Immunology, Tata McGraw Hill Publ. New Delhi</li></ol>	
<b><u>Learning Outcomes</u></b>	<ol style="list-style-type: none"><li>1. Development of knowledge on the cellular ontogeny and organ involvement in immunity and how the immune system can fight infections and diseases.</li><li>2. Knowledge on development of body immune mechanisms and their applications.</li><li>3. Understanding of current immunology news and issues</li></ol>	