

**TEACHING PLAN: 2021-22****Department of Microbiology****Faculty Member: Professor Dr. Rajashree B. Patwardhan**

<b>Class- T. Y. B. Sc Sem I Course No: MB 352</b>			
<b>Course Name: IMMUNOLOGY I</b>			
<b>Month &amp; Method</b>	<b>No. of Lectures Allotted</b>	<b>No. of Lectures required</b>	<b>Topics</b>
<b>October</b>	<b>10</b>	<b>10</b>	<b>1. Organs of immune system:</b> a. Primary lymphoid organs (Thymus and Bone Marrow): Thymus – structure, thymic education (positive and negative selection), Bone marrow –Structure and Negative selection b. Secondary lymphoid organs – structure and function of spleen and lymph node, mucous associated lymphoid tissue, lymphatic system and lymph circulation 2. Innate immunity: Non-specific mechanisms of defense: Second line of defense: a. Humoral components: Defensins, pattern recognition proteins (PRP) and pathogen associated molecular patterns (PAMPs), complement, kinins, and acute phase reactants.
<b>November</b>  Online teaching  Zoom platform  Use of PPT, Videos	<b>10</b>	<b>12</b>	b. Cellular components: Phagocytic cells – PMNL, macrophages (reticulo- endothelial cell system) and dendritic cells c. Phagocytosis (oxygen dependent and independent systems), Complement activation (Classical, Alternative and lectin pathway), Inflammation (cardinal signs, mediators, vascular and cellular changes, role of Toll-like receptors) Innate Immunity 1. First line of defense, 2. Second lines of defense: Humoral components: Defensins, pattern recognition proteins (PRP) and pathogen associated molecular patterns (PAMPs), complement, kinins, acute phase reactants. 5. Cellular components: Phagocytic cells – PMNL, macrophages (reticulo-endothelial cell system) and dendritic cells.

			antigens, role of cytokines in activation and differentiation of B-cells
May	14	14	<p><b>B. Cell Mediated Immune Response</b></p> <p>i. Activation and differentiation of T cells, role of cytokines in activation ii. Mechanism of Cytotoxic T lymphocytes (CTL) mediated cytotoxicity, Antibody-dependent cellular cytotoxicity (ADCC), iii. Significance of Cell Mediated Immune Response (CMI), iv. Immune response against tumors and foreign transplanted cells</p> <p><b>3. Hypersensitivity</b></p> <p>a. General principles of different types of hypersensitivity reactions, b. Gell and Coomb's classification of hypersensitivity – mechanism with examples for type I (Immediate), II, III and IV (delayed)</p>
June	12	13	<p><b>4. Autoimmunity and Autoimmune diseases:</b></p> <p>a. Immunological tolerance</p> <p>b. Types of autoimmune diseases</p> <p>c. Factors contributing development of autoimmune diseases</p> <p>d. Immunopathological mechanisms</p> <p>e. Diagnosis and treatment of autoimmune diseases: Myasthenia gravis and Rheumatoid arthritis</p> <p>f. Therapeutic immunosuppression for autoimmunity</p> <p><b>5. Immunodeficiency:</b></p> <p>i. Complement deficiencies</p> <p>ii. Introduction to congenital immunodeficiency disorders: Common Variable Immune Deficiency (CVID) and acquired immunodeficiency: Immune mechanisms in AIDS</p>
	36	39	<b>Total lectures Conducted = 39</b>

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