

Subject Code: 2SC2000201	Subject Title: Basic and Advances Immunology
COURSE TYPE: CORE COURSE	

Course Objective:

Immunology covers the important aspects of immunity, antigens and roles of antibodies, Hypersensitivity, Autoimmune disease, different immunodiagnostic techniques of importance, etc.

Teaching scheme (hours) per week		Credit			Theory Marks		Practical Marks		Total
Theory	Practical	Theory	Practical	Total	Uni. Assessment	Cont. Assessment	Uni. Assessment	Cont. Assessment	
4	-	4	-	4	60	40	-	-	100

Unit	Content	Lectures	Weightage
1	✓ Cells & Organs of Immune system. ✓ Innate immunity (nonspecific); Acquired immunity (specific) ✓ Complement system ✓ Antigens ✓ Hapten ✓ MHC molecules ✓ Antibodies – structure and function, Immunoglobulin isotypes	15	25%
2	✓ T-Cell Maturation, Activation, and Differentiation ✓ B-Cell Generation, Activation, and Differentiation ✓ Cytokines and their role ✓ Hypersensitivity-types	15	25%
3	✓ Autoimmunity: (A) Organ specific diseases (Addison's disease, Autoimmune hemolytic anaemia, Good pastures syndrome, Graves' disease, Hashimotos thyroiditis, Insulin dependent diabetes mellitus, Myasthenia gravis), (B) Systemic diseases (Multiple sclerosis, Rheumatoid arthritis) ✓ Immunodeficiency: Primary & Secondary ✓ Cancer: Origine and terminology ✓ Malignant Transformation of Cells ✓ Tumor Antigens	15	25%
4	Immunodiagnostic Techniques: ✓ Antigens and Antibody reactions in vitro: Agglutination, Precipitation,	15	25%

	complement fixation, ELISA, Western Blotting, Immunodiffusion, Immuno-electrophoresis, Immunofluorescence, Immunoprecipitation, Radioimmunoassays, serotyping.		
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Learning Outcome:

Students will learn the Fundamental aspects of Immunology including the Types of Immunity, Antigens and Antibodies . They will also get acquainted with some advanced techniques that are used for Immuno- and serodiagnosis .

LIST OF TEXTBOOKS:

1. Kuby, RA Goldsby, Thomas J. Kindt, Barbara, A. Osborne Immunology, 6th Edition, Freeman, 2002.
2. Brostoff J, Seaddin JK, Male D, Roitt IM., Clinical Immunology, 6th Edition, Gower Medical Publishing, 2002.
3. Janeway et al., Immunobiology, 4th Edition, Current Biology publications., 1999.
4. Paul, Fundamental of Immunology, 4th edition, Lippencott Raven, 1999.
5. Coleman, R.M., Lombard, M.F. and Sicard, R.E. 1992. Fundamental Immunology, 2nd ed, Dubuque, Iowa:Wm. C.Brown.
6. Male, D., Champion, B., Cooke, A. and Owen, M. 1991. Advanced immunology. Mosby publication, Baltimore.
7. Goding, Monoclonal antibodies, Academic Press. 1985.
8. Dubey, RC, Advanced Biotechnology, 1st edition, S Chand and Company Limited, 2014.