BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE, PILANI
INSTRUCTION DIVISION
SECOND SEMESTER 2018-2019
(Course Handout Part II)

Dated: Jan 16, 2021

In addition to part I (general handout for all courses appended to the timetable) this portion gives further specific details regarding the course.

Course No. **: BIO F342**
Course Title **: Immunology**
Instructor in Charge **: UMA S. DUBEY**
Tutorial: **: Uma S. Dubey**

1. **Course Description**: Introduction to immune system, cell mediated and humoral imunity, immunity to infectious diseases, immune mechanisms involved in cancer and transplantation immunology**.**

2. **Scope and objective of the course:** This course has been designed to provide an insight in the concept and latest developments in immunology. Emphasis will be given on developing a molecular, cellular and clinical perspective of the area.

3. Text Book (TB): Kuby Immunology, Jenni Punt, et al., 8th Ed. Freeman and Company. 2019.

4. Reference Book (RB)

RB1. The Elements of Immunology, Fahim Halim Khan. Pearson Education.2009.

RB2. Immunology: An Introduction, Tizard, Cengage publication, 4th Ed. 2010

5. Course Plan:

Module No.	**Lecture Session**	**Reference**	**Learning outcomes**
Overview of the immune System	L1.1. Historical Perspectives	TB Chapter 1	Understanding basics concepts with a historical perspective and clinical approach
	L1.2. Basic concepts of human immune response		
	L1.3. Clinical perspective of the Immune system		
Immune cells, Organs & Innate immunity	L2.1. Cells of the immune system	TB Chapter 2	Understanding the immune system at cellular and systemic level
	L2.2. Organs of the immune system		
Recognition and response	L3.1- L3.3 B and T cell Receptors	TB Chapter 3	Understanding the structure and signaling of receptors in the immune system
	L 3.4-L3.5Cytokines and receptors		
	L3.6-L3.7 Outcomes of immune system recognition	TB Chapter 4	

Innate Immune System	L4.1. Anatomical Barriers and Phagocytosis	TB Chapter 5	Understanding the innate immune system and complement activity
	L4.2. Cellular innate responses & inflammation		
	L4.3. Complement system and its functions	TB Chapter 6	
	L4.4. Complement Regulation and its deficiency		
MHC and Acquired Immune Response	L5.1. Structure and function of MHC I	TB Chapter 7	Understanding MHC restrictions and the acquired immune responses
	L5.2. Structure and Function of MHC II		
	L5.4. - L5.6 T cell structure and Function	TB Chapter 8	
	L5.7.- L5.8 .B cell structure and Function	TB Chapter 11	
	L5.8- L5.10 Cytokines and receptors	TB Chapter 3	
Effector Cell Responses	L6.1. Antibody mediated effector cells	TB Chapter 12	
	L6.2. Cell mediated Effector Responses		
Clinical Immunology	L7.1. – L7.2. Autoimmunity , Autoimmunity and Transplantation	TB Chapter 16	Understanding Immunology of various Diseases
	L7.3.- L5.6. Infectious Diseases and Vaccines	TB Chapter 17	
	L7.7- L7.8. Immunodefficiency	TB Chapter 18	
	L7.9.- L7.10. Cancer	TB Chapter 19	
Experimental systems and Methods	L8.1. Concepts	TB Chapter 20	Developing an Experimental approach
	L8.2. Recent Developments		

6. **Evaluation scheme:**

Component	Duration	Weightage (%)	Date & Time	Venue	Remarks
Quizzes (multiple)	10 minutes	15	TBA		CB/OB
Mid Sem test	1.5 h	30			Partly OB
Assignments/Group Discussion		15	TBA		OB
Compre exam	3 h	40			Partly OB

7. **Chamber consultancy hour**: To be announced in class room

8. **Notices:** Notices will be displayed in Google Class Room and/or Nalanda

9. **Make up Policy:** Make up may be granted only for genuine cases such as hospitalization

10. **Note**: (1) Experimental methods will be discussed in the Tutorial hour.
(2) Students are expected to maintain regularity in class.

Uma S.Dubey
Instructor In charge