



In the name of God



Isfahan University  
of Medical Sciences

Isfahan Medical School  
**second semester lesson plan**

The First semester of the academic year 1405-1404

<p>Semester : 2</p> 	<p><b>Academic Year :1403-1404</b></p> 
<p><b>Level:</b> Basic Sciences in medical school</p>	<p><b>Major:</b> Medical</p>
<p><b>Course Title:</b> Medical Immunology (Theoretical)</p>	<p><b>Department:</b> Immunology</p>
<p><b>Course Code:</b> 1113243131</p>	<p><b>University Professor or Faculty member:</b> Dr. Andalib وDr.Eskandari وDr.Rezaie و</p>
<p><b>Class No. :</b>Tadbir class-room 1</p>	<p><b>Credit Hours:</b> 2 hrs. per week</p>
<p><b>Prerequisite:</b></p>	<p><b>Credit Units:</b> Theoretical (.....Theo and ..... Prac )</p>
<p><b>Availability of Professor:</b> +989133134128, whatsapp group</p>	<p><b>Tel:</b> +983137929031</p>
<p><b>Office Address:</b> Immunology Department, Isfahan Medical School</p>	<p><b>E-mail:</b> andalib@med.mui.ac.ir</p>
<p><b>Name of Student Representative and Cell phone Number:</b></p>	<p><b>Number of Students :</b></p>
<p><b>The General Purpose of the Lesson:</b> achievement of knowledge about the basic principles of the human immune system, including immune cells and molecules, the interactions and mechanisms involved in immune system.</p>	
<p><b>Learning Outcomes (Objectives):</b></p>	

**Assessment Methods: multiple choice questions in mid and final exam,**

**(The Assessment Methods that will be Used to Test Students Learning outcomes & the Skills & Competencies Stated in learning Outcomes)**

<b>Assessment</b>	<b>Score From 20</b>
<b>Mid Exam (Theory)</b>	<b>40</b>
<b>Final Exam</b>	<b>40</b>
<b>Practical Exam</b>	<b>20</b>
<b>Assignments:</b>	
<b>Total Marks</b>	<b>100</b>

**Main References (Text Books): Cellular and Molecular Immunology**

**Authors:** Abul Abbas Andrew Lichtman Shiv Pillai

**Imprint:** Elsevier, 9<sup>th</sup> or 10<sup>th</sup> Edition, Language: English

**References for More Reading:**

Medical Immunology Arad Publications Shiraz School of Medical Sciences (in Persian)

**Student's Responsibilities: Follow the class subjects regularly, answer the written questions and homework**

**Attendance Rules: based on University regulation**

**Department's Attitudes :**

**Mid Exam Date:.....**

**Final Exam Date: .....**

Due to special circumstance, the lesson loaded on Navid U. software

NO of Session	Main Topic	Teacher's Name	Place & Time	Date	Method of Presentation
one	History of Immunology and Overview of Immune responses: Definition of Immunology, a brief immunological history, The adaptive immune response(Humoral immunityand Cell-mediated immunity)	Dr.Eskandari	Due to special circumstance, the lesson loaded on Navid U. software		Making speech and explain the prepared related slides
two	The Cells of the Immune System: Mast Cells, Basophils, Eosinophils, Lymphocytes, Natural Killer Cells, Innate Lymphoid Cells	Dr.Eskandari	Due to special circumstance, the lesson loaded on Navid U. software		Making speech and explain the prepared related slides
three	Primary and Secondary Tissues of the Immune System (Bone marrow, Thymus, lymph node, Spleen,.etc.) and Leukocyte Circulation	Dr. Eskandari	Due to special circumstance, the lesson loaded on Navid U. software		Making speech and explain the prepared related slides
4	Innate Immunity. Components and Functions	Dr.Eskandari	Due to special circumstance, the lesson loaded on Navid U. software		Making speech and explain the prepared related slides
5	Phagocytosis and Intracellular Killing Process	Dr.Eskandari	Due to special circumstance, the lesson loaded on Navid U. software		Making speech and explain the prepared related slides
6	Antibodies: General Features of Antibody Structure, Function, and Synthesis , assembly, and expression of	Dr. Andalib	Due to special circumstance, the lesson loaded on		Making speech and explain the prepared related

	Antibody		Navid U. software		slides
7	Different Types, and Biological Function of Antibodies (IgM, IgG, IgE, IgA, IgD)	Dr. Andalib	Due to special circumstance, the lesson loaded on Navid U. software		Making speech and explain the prepared related slides
8	Antigens, Immunogenes, Definition of different Types of Antigens, T Dependent and T Independent Antigens	Dr. Andalib I	Due to special circumstance, the lesson loaded on Navid U. software		Making speech and explain the prepared related slides
9	Major Histocompatibility Complex (MHC). Genetic organization and Molecular structure,	Dr. Andalib	Due to special circumstance, the lesson loaded on Navid U. software		Making speech and explain the prepared related slides
10	Antigen Presentation to T Lymphocytes and the Functions of Major Histocompatibility Complex Molecules( Exocytose and endocytic pathways)	Dr. Andalib	Due to special circumstance, the lesson loaded on Navid U. software		Making speech and explain the prepared related slides
11	Structure and function of B lymphocytes, B cells development and differentiation to plasma cells	Dr. Andalib	Due to special circumstance, the lesson loaded on Navid U. software		Making speech and explain the prepared related slides
12	Structure and function of T lymphocytes - developmental stages and the expression of specific receptors including: the differentiation of CD4 + and CD8 + T cells and memory T cells	Dr. Andalib	Due to special circumstance, the lesson loaded on Navid U. software		Making speech and explain the prepared related slides

13	Relationship between macrophage, T cell, B cell, cytokines and antigen processing	Dr. Andalib	Due to special circumstance, the lesson loaded on Navid U. software		Making speech and explain the prepared related slides
	<b>Midterm exam</b>	۱۲,۰۱ PM			
14	Cytokines (part I) Their classification - Their immunological properties include inflammatory and anti-inflammatory cytokines	Dr. Andalib	Due to special circumstance, the lesson loaded on Navid U. software		Making speech and explain the prepared related slides
15	Cytokines (part II) hematopoietic cytokines- innate immune cytokines and chemokines	Dr. Andalib	Due to special circumstance, the lesson loaded on Navid U. software		Making speech and explain the prepared related slides
16	Complement System : Structure, and Function	Dr. Rezaei	Due to special circumstance, the lesson loaded on Navid U. software		Making speech and explain the prepared related slides
17	Activation and Regulation of Complement System and Their Pathways	Dr. Rezaei	Due to special circumstance, the lesson loaded on Navid U. software		Making speech and explain the prepared related slides
18	Humoral Immune Response: Effector Mechanisms of Humoral Immunity	Dr. Rezaie	Due to special circumstance, the lesson loaded on Navid U. software		Making speech and explain the prepared related slides
19	Cell- Mediated Immune Response: Effector Mechanisms of Cell	Dr.Rezaie	Due to special circumstance,		Making speech and explain the

	Immunity		the lesson loaded on Navid U. software		prepared related slides
20	Immunologic Tolerance Mechanisms and Their Role In Disease	Dr.Rezaie	Due to special circumstance, the lesson loaded on Navid U. software		Making speech and explain the prepared related slides
21	Autoimmunity Disease and Their Mechanisms	Dr.Rezaie	Due to special circumstance, the lesson loaded on Navid U. software		Making speech and explain the prepared related slides
22	Basic Immunological responses against Viruses	Dr. Andalib	Due to special circumstance, the lesson loaded on Navid U. software		Making speech and explain the prepared related slides
23	Basic Immunological responses against allografts	Dr.Rezaie	Due to special circumstance, the lesson loaded on Navid U. software		Making speech and explain the prepared related slides
	<b>End of semester and exam</b>				
<b>Tuesday -12-14</b>	<b>Preparation of the Students before the Beginning of the Class</b>	<b>University Professor</b>	<b>Course Topics</b>	<b>Practical Classes Tuesday -12-14</b>	
1	Ag-antibody interactions, basic and principles of serology laboratory tests	Dr.Rezaie	Ab-Ag reaction	<b>The First Week</b>	

2	Performing C-reactive Protein (CRP) test and knowing its uses and interpretation - Introduction to Erythrocyte sedimentation rate (ESR) test	Dr.Rezaie	CRP, ESR	<b>The Second Week</b>
3	Performing direct and indirect ABO grouping tests. Rh-du test and knowledge of its application in blood transfusion	Dr.Eskandari	ABO, Rh	<b>The Third Week</b>
4	Perform direct and indirect Coombs tests and their use, including the diagnosis of drug allergies and crossmatch tests	Dr.Eskandari	cross-match tests	<b>The Forth Week</b>
5	Performing ASO and interpretation and application	Dr.Andalib	ASO	<b>The Fifth Week</b>
6	Ag-Ab demonstration device including Flow-cytometry system and Elisa performance for Ag and ab assay	Dr.Andalib	Flow-cytometry, Elisa	<b>The sixth Week</b>