Forman Christian College, Lahore
(A Chartered University)
KAM-School of Life Sciences
Spring, 2023

Course Information

Molecular Immunology (BIOT 307) **3 Credits**
Lecture (S-316): Tuesday and Thursday 3:30: pm – 4:45 pm

Recommended reading:

1. Abul K. Abbas, Andrew H. Lichtman, Shiv Pillai "Cellular and Molecular Immunology" 2015
2. Thomas J Kindt, Barbara A Osborne, Richard A Goldsby, WH Freeman "*Kuby Immunology*"

Instructor's Information

Dr. Muhammad Mustafa
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Course Description:

The immune system provides protection against pathogens and cancer. The organs and cells of the immune system maintain a healthy state of the body through elimination of infectious agents and control of malignancies. In this course you will use the knowledge of cellular and molecular biology to understand how the immune system functions and malfunctions. It commences with the important components involved in host defense against infectious agents. Introductory lectures serve to describe and differentiate between innate and adaptive immunity. Subsequently, cellular interactions, including the differentiation of B and T cells and the production of cytokines, will be described. This will include the mechanisms of T cell activation and regulation. Finally the role of immune system in health and disease will be discussed.

Learning Outcomes:

On successful completion of this course, the students will:

1) Learn the fundamental concepts in immunology
2) Be able to understand the various mechanisms of immune response
3) Develop an understanding of the role of immune system in diseases and allergies
4) Study, analyze and interpret scientific literature

Course Policies:

Attendance: Students must attend all class meetings to assure the best possible grades; failure to do so may drastically affect the grade. If a student fails to attend 80% of the lectures, she/he will not be allowed to appear in the Final Examination**.** The classes will meet twice a week for 75 minutes each day. Excused absence on account of family emergency and/or participation in university activities will not count towards class attendance. The weightage of the attendance will be 10% of the grade.

Exams: There will be two exams during the semester. Mid Term Exam will be of one-hour duration and the Final Exam will be of two-hour duration. Mid Term Exam will contribute 30% and the Final Exam will contribute 35% towards the final grade.

Assignments + Presentations: There will be One Assignment during the semester. The weightage of the assignments will be 10 % of the grade. No credit will be given if plagiarism/copied material found or submitted after due date.

Missed Exam: Students must take all the exams. If you do not appear in the exam you will be awarded zero point and your grade will be drastically affected. Make up-exam will not be given except on account of death of immediate family member.

Cheating, plagiarism and mobile phones: There will be no tolerance for cheating/plagiarism. Any student caught cheating during the exam will be awarded zero point and may be dropped from the course. Detailed policy of classroom misconduct, cheating and plagiarism given in the Student Handbook will be strictly followed. Use of mobile phone in the class and exams is strictly prohibited. Students are advised to silence their mobiles before coming to class. Failure to do so will lead to disciplinary action.

Weight-age and Grading:

Activity	Weight age
Midterm exam	30 %
Final exam	35 %
Assignment	10 %
Quiz	15 %
Attendance	10 %
Total	**100 %**

The grading system for the course is as follows:

GRADES	QUALITY POINTS	NUMERICAL VALUE	MEANING
A	4.00	93-100%	Superior
A-	3.70	90-92%	
B+	3.30	87-89%	
B	3.00	83-86%	Good
B-	2.70	80-82%	
C+	2.30	77-79%	
C	2.00	73-76%	Satisfactory
C-	1.70	70-72%	
D+	1.30	67-69%	
D	1.00	60-66%	Passing

Course Contents BIOT 307

Week	Week begins (Mon)	Topic
1.	Week 1	Properties and Overview of Immune Responses
2.	Week 2	Cells and Tissues of the Immune System
3.	Week 3	Leukocyte Circulation and Migration into Tissues, Innate Immunity
4.	Week 4	Antibodies and Antigens
5.	Week 5	Major Histocompatibility Complex Molecules and Antigen Presentation to T Lymphocytes
6.	Week 6	Immune Receptors and Signal Transduction
7.	Week 7	Lymphocyte Development and Antigen Receptor Gene Rearrangement
8.	**Week 8**	**Midterm Exam as per University Calendar**
9.	Week 9	Activation of T Lymphocytes, Differentiation and Functions of CD4+ and CD8+ effector T cells
10.	Week 10	B Cell Activation and Antibody Production
11.	Week 11	Effector Mechanisms of Humoral Immunity, Allergy
12.	Week 12	Hypersensitivity Disorders
13.	Week 13	Immunologic Tolerance and Autoimmunity
14.	Week 14	Transplantation Immunology, Immunity to Tumors, Congenital and Acquired Immunodeficiencies
13.		**Final Exam as per University Calendar**

Important dates (2023)

(Please follow the academic calendar)