هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

Course Specifications

Course Title:	Pathogenesis of Diseases
Course Code:	POD233
Program:	Bachelor of Medicine, Bachelor of Surgery (MBBS)
Department:	NA
College:	College of Medicine
Institution:	Alfaisal University

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A. Course Identification

1. Credit hours: 5 (3+2+2)
2. Course type **a.** University ☐ College ■ Department ☐ Others ☐ **b.** Required ■ Elective ☐
3. Level/year at which this course is offered: Sem 3, Year 2
4. Pre-requisites for this course (if any)**:** Sem 1 and 2
5. Co-requisites for this course (if any)**:** None

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**	65	56%
2	**PBL**	32	27%
3	**Lab**	20	17%

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	**Lecture**	65
2	**Laboratory/Studio**	20
3	**Tutorial**	32
4	**Others** (specify)	
	Total	117

B. Course Objectives and Learning Outcomes

1. Course Description

Pathogenesis of Diseases is an 11-week course integrating the basic aspects of Immunology, Microbiology, Pathology, and Pharmacology. Although several aspects are peculiar to each individual discipline, integration will be sought whenever possible to present the students with a homogeneous view of the different aspects constituting the basic mechanism of diseases essential to approach clinical practice. Several interactive occasions in the form of large group discussions and clinicopathological conferences will be arranged. Practically-oriented activities, either hands-on or virtual, are also included. The aim of these activities is to tie together the topics from different disciplines and make it easier for the students to grasp concepts better.

2. Course Main Objective

The main objective of this course is to integrate the basic principles of disease development with its etiology, pathological, microbiological and immunological basis. Basic principles of pharmacotherapy will also be integrated wherever appropriate.

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	**Knowledge and Understanding**	
1.1	Explain the basic characteristics of disease, classification, etiology, pathogenesis, structural and functional manifestations, complications, sequelae, and prognosis.	PLO4
1.2	Discuss the causes and mechanisms of cell injury, necrosis, apoptosis, cellular ageing, and acute and chronic inflammation, along with anti-inflammatory drugs.	PLO4
1.3	Describe the relationship of host and microorganisms; how they can cause infections and how they can be combated with natural (the immune system) and artificial (vaccines, antibiotics) defenses.	PLO4,21
1.4	Identify the general concepts underlying interactions between drug and the body including pharmacokinetics, pharmacodynamics, drug synergism, drug antagonism (various types), advantages and disadvantages of various routes of drug administration, half-life, and volume of distribution and dose-response curves.	PLO6,30
1.5	Describe how the body responds to invading organisms by innate and adaptive immune mechanisms.	PLO4
1.6	Discuss the homeostasis and various hemodynamic disorders including shock, hemorrhage and thrombosis.	PLO4
1.7	Describe the disorders of differentiation and growth and molecular mechanisms leading to neoplasia and general principles of anti-cancer drugs.	PLO4
1.8	Outline the mechanism of action, important adverse effects and pharmacological basis of antibiotics, anti-fungals, anti-protozoals, analgesics, and drugs acting on autacoids, autonomic nervous system drugs.	PLO6,21
2	**Skills**	
2.1	Perform the major techniques to grow and identify microorganisms, plot dose-response curves, using the most medically relevant immune assays.	PLO4
3	**Values**	
3.1	Adhere to the attendance policy.	
3.2	Maintain professional conduct with colleagues, faculty, and staff.	

C. Course Content

No	List of Topics	Contact Hours
1	Introduction to microbial world	3
2	Innate immunity and cell injury	5
3	The complement system and cell death	10
4	Acute and chronic inflammation	9
5	Immunogenetics and B cell development	6
6	Host pathogen interaction and hemodynamic disorders	7
7	Infection and shock	7
8	Immunity to infection and neoplasia	7
9	General principles of cell growth and basic principles of anticancer chemotherapeutic drugs	7

10	Infection control and autoimmunity	3
11	Clinical and diagnostic aspect of Oncogenesis	1
12	PBL	32
13	Lab sessions	20
Total		117

D. Teaching and Assessment

1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	**Knowledge and Understanding**		
1.1	Explain the basic characteristics of disease, classification, etiology, pathogenesis, structural and functional manifestations, complications, sequelae, and prognosis.	Lectures, PBLs, Labs	Summative assessment
1.2	Discuss the causes and mechanisms of cell injury, necrosis, apoptosis, cellular ageing, and acute and chronic inflammation, along with anti-inflammatory drugs.	Lectures, PBLs, Labs	Summative assessment
1.3	Describe the relationship of host and microorganisms; how they can cause infections and how they can be combated with natural (the immune system) and artificial (vaccines, antibiotics) defenses.	Lectures, PBLs, Labs	Summative assessment
1.4	Identify the general concepts underlying interactions between drug and the body including pharmacokinetics, pharmacodynamics, drug synergism, drug antagonism (various types), advantages and disadvantages of various routes of drug administration, half-life, and volume of distribution and dose-response curves.	Lectures, PBLs, Labs	Summative assessment
1.5	Describe how the body responds to invading organisms by innate and adaptive immune mechanisms.	Lectures, PBLs, Labs	Summative assessment
1.6	Discuss the homeostasis and various hemodynamic disorders including shock, hemorrhage and thrombosis.	Lectures, PBLs, Labs	Summative assessment
1.7	Describe the disorders of differentiation and growth and molecular mechanisms leading to neoplasia and general principles of anti-cancer drugs.	Lectures, PBLs, Labs	Summative assessment

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.8	Outline the mechanism of action, important adverse effects and pharmacological basis of antibiotics, anti-fungals, anti-protozoals, analgesics, and drugs acting on autacoids, autonomic nervous system drugs.	Lectures, PBLs, Labs	Summative assessment
2.0	**Skills**		
2.1	Perform the major techniques to grow and identify microorganisms, plot dose-response curves, using the most medically relevant immune assays.	Lectures, Labs	Formative and summative assessment
3.0	**Values**		
3.1	Adhere to the attendance policy.		Continuous assessment
3.2	Maintain professional conduct with colleagues, faculty, and staff.		Continuous assessment

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	PBL	2,3,4,5,7,8, 9	10%
2	Mid-term	6	25%
3	Final Exam	11	65%

***Assessment task** (i.e., written test, oral test, oral presentation, group project, essay, etc.)

E. Student Academic Counseling and Support

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice:

The CoM program established its own mentorship program that employs all full-time faculty as mentors. Through this program, every medical student in the program is assigned a mentor at the beginning of their first semester of studies. The program has a broad scope covering academic advising and counseling. The mentors handle all aspects related to academic advising, including academic planning, academic performance review, advice on course drop or withdrawal, study skills, and time management.

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	**Immunology** • Lippincott's Illustrated Reviews. Immunology. 3rd Ed. • Reference: Cellular and Molecular Immunology. AK Abbas, AH Lichtman and Shiv Pillai. 7th ed, ELSEVIER, Philadelphia 2012. **Microbiology**

	• Lippincott's Illustrated Reviews. Microbiology. 3rd Ed. • Mims' Medical Microbiology 6th Ed. **Pathology** • Robbins and Cotran Basic Pathology, Professional Edition, 9th Ed – 2012 **Pharmacology** • Rang & Dale's Pharmacology 7th edition • Lippincott Illustrated Reviews: Pharmacology 6th edition (Lippincott Illustrated Reviews Series) Sixth, North American Edition by Karen Whalen PharmD BCPS (Author) • Rang & Dale's Pharmacology (8th Edition). Authors: James Ritter Rod Flower Graeme Henderson Humphrey Rang
Essential References Materials	
Electronic Materials	PowerPoint presentations uploaded on Alfaisal E-learning Portal
Other Learning Materials	

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Classrooms, Laboratories
Technology Resources (AV, data show, Smart Board, software, etc.)	AV (Audio-Visual), Smartboard, Moodle (E-learning Management)
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Course and Faculty Evaluation Survey	Students	Survey

Evaluation areas (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)
Evaluators (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)
Assessment Methods (Direct, Indirect)

H. Specification Approval Data

Council / Committee	
Reference No.	
Date	