هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

اعتماد
NCAAA
T4
2020

Course Specifications

Course Title:	**Principles of Disease and Therapeutics I**
Course Code:	**252 DST-6**
Program:	**Bachelor of Medicine and Bachelor of Surgery (MBBS)**
Department:	**N/A**
College:	**Medicine**
Institution:	**Najran University**

A. Course Identification

1. Credit hours: **6 (4+2)**
2. Course type **a.** University ☐ College ☐ Department ☐ Others (Program) ☑ **b.** Required ☑ Elective ☐
3. Level/year at which this course is offered: **Year 2 - Semester-2 (level 5)**
4. Pre-requisites for this course (if any)**:** None
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	52%
2	**Blended**		
3	**E-learning**		
4	**Distance learning**		
5	**Other** Practical	٦٠	48%

7. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1	**Lecture**	**55**
2	**Laboratory/ Practical**	**60**
3	**Tutorial**	
4	**Others** (specify)	
a	**Problem-Based Learning (PBL)**	**8**
b	**Team-Based Learning (TBL)**	**2**
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	Total	**125**

B. Course Objectives

1. Course Description

This course is delivered to the medical students at the 2nd year/ level four which includes the basic principle of pathology (the scientific study of disease) along with the basic principles of pharmacology in an integrated manner. The scientific study of disease includes cell injury and adaptation, inflammation, neoplasia, and hemodynamic disorders. The principles of pharmacology include pharmacokinetics and pharmacodynamics and the pharmacology of drugs affecting the sympathetic and parasympathetic nervous system.

2. Course Main Objective

By the end of this course, the students are expected to:

1. **Discuss** the structural and functional changes in cell injury, neoplasia, inflammation, and hemodynamic disorders.
2. **Explain** the terminology and concepts related to general pathology and the pathological aspects.
3. **Apply** a problem-solving approach to the pathologic disorders
4. **Describe** the basic principles of drug absorption, and distribution in the body
5. **Discuss** the possible mechanisms by which drug can exert its therapeutic and undesirable effects
6. **Explain** the different methods of drug administration and dosage forms.

C. Course Content

No	List of Topics	Contact Hours
1.	Introduction to study of disease (lectures)	1
2.	Cell pathology: Cell Injury 1 (lectures)	1
3.	Cell pathology: Cell Injury 2 (lectures)	1
4.	Cell pathology: Cellular death (lectures)	1
5.	Autophagy and degeneration	1
6.	Introduction to general pharmacology (lecture)	1
7.	Pharmacokinetics: Drug Absorption (lecture)	1
8.	Factors affecting drug absorption (lecture)	1
9.	Routes of drug administration (lecture)	1
10.	Drug distribution (lecture)	1
11.	Cell pathology: Cellular Adaptation (lectures)	1
12.	Practical on cell pathology (LAB)	2
13.	Practical on cell pathology (LAB)	2
14.	PBL1 Discussion	٢
15.	PBL1 Outcome	٢
16.	Introduction to experimental pharmacology (lab)	2
17.	Drug dosage forms (lab)	2
18.	Drug redistribution phenomenon. (lecture)	1
19.	Drug plasma protein binding (lecture)	1
20.	Drug tissue protein binding (lecture)	1
21.	Acute Inflammation I (lectures)	1
22.	Acute Inflammation II (lectures)	1
23.	Inflammatory mediators (lectures)	1
24.	Drug biotransformation (lecture)	1
25.	Phases, sites, and factors affecting biotransformation. (lecture)	1
26.	Drug Excretion: Renal and Non-renal excretion (lecture)	1
27.	Practical on acute inflammation 1 (LAB)	2
28.	Practical on acute inflammation2 LAB	2
29.	Channels of drug administration (lab)	2

30.	Drug metabolism, liver microsomal enzymes (lab)	2
31.	Clinical pharmacokinetics. (lecture)	1
32.	Chronic Inflammation (lectures)	1
33.	Chronic Inflammation examples (lectures)	1
34.	Practical on chronic inflammation 1 (LAB)	2
35.	Healing process I (general concepts) (lectures)	1
36.	Pharmacodynamics: Mechanisms of drug action, trans-membrane signaling mechanisms, and second messengers. I (lecture)	1
37.	Pharmacodynamics: Mechanisms of drug action, trans-membrane signaling mechanisms, and second messengers. II (lecture)	1
38.	Drug concentration-response relationship. (lecture)	1
39.	Pharmacokinetic models of drug metabolism (lab)	2
40.	Healing process II	1
41.	Healing process III (skin wound& bone fracture healing) (lectures)	1
42.	Practical on healing 1 (LAB)	2
43.	INTERPRETATION OF LAB RESULT 1 (LAB)	2
44.	Receptor regulation and variations in drug response. (lecture)	1
45.	Drug antagonism (lecture)	1
46.	Drug receptor interactions, drug targets, and signaling transduction mechanisms(lab).	2
47.	Drug interactions (lecture)	1
48.	Haemodynamic Disorders 1: Shock (lectures)	1
49.	Haemodynamic Disorders 2: Thrombosis (lectures)	1
50.	Haemodynamic Disorders 3: infraction, embolism (lectures)	1
51.	PBL2 Discussion	2
52.	PBL2 Outcome	2
53.	Drug interactions: Pharmacodynamic interactions (lecture)	1
54.	Undesirable drug effects. (lecture)	1
55.	Autonomic NS Pharmacology: Introduction. (lecture)	1
56.	Direct-acting cholinomimetics (lecture)	1
57.	Reversible Indirect cholinomimetics. (lecture)	1
58.	Hemodynamic Disorders 4: Oedema (lectures)	1
59.	Hemodynamic Disorders 5 : congestion & hemorrhage (lectures)	1
60.	Practical on hemodynamic disturbances 1 (LAB)	2
61.	INTERPRETATION OF LAB RESULTS 2	2
62.	Dose-response curve (lab).	2
63.	Drug dose calculation (Lab)	2
64.	Irreversible Indirect cholinomimetics: OPC (lecture)	1
65.	Anti-muscarinic drugs (natural and synthetic) (lecture)	1
66.	Neoplasia I: (lectures)	1
67.	Neoplasia 2: (lectures)	1
68.	Neoplasia 3: (lectures	1
69.	Sympathomimetics: Direct acting and indirect acting (lecture)	1
70.	Alpha adrenergic blockers: (Non-selective and selective) (lecture)	1
71.	Beta-adrenergic blockers: (Non-selective) (lecture)	1

72.	Neoplasia 4: EXAMPLES	1
73.	Practical on neoplasia 1 (LAB)	2
74.	Practical on neoplasia 1 (LAB)	2
75.	Prescription writing (Lab)	2
76.	Effect of autonomic drugs on rabbit Eye (Lab)	2
77.	Effect of spasmogens and spasmolytics on isolated rabbit intestine (Lab)	2
78.	Amyloidosis (lectures)	1
79.	Calcification (lectures)	1
80.	Amyloidosis & Calcification (Practical)	٢
81.	Cardio-selective β-blockers (lecture)	1
82.	Adrenergic neuron blockers (lecture)	1
83.	Effect of autonomic drugs on rabbit heart (Lab)	2
84.	TBL	2
85.	Practical on basic histopathology lab principles I	2
86.	Histopathology techniques (Practical)	2
87.	Effect of autonomic drugs (agonist) on rabbit blood pressure (Lab)	2
88.	Effect of autonomic drugs (antagonist) on rabbit blood pressure (Lab)	2
89.	Medical samples related to Autonomic drugs (Lab)	2
90.	Practical on basic histopathology lab principles II (Practical)	2
Total		125

D. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Mid-block exam	Week 4	20 %
2	TBL evaluation	Weeks 4	10%
3	PBL evaluation	Weeks 1-6	10 %
4	End of course exams: - Theory: MCQs (40%) - Practical: OSPE (20%)	7th	60%

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

E. Learning Resources and Facilities

1. Learning Resources

Required Textbooks	1. PHARMACOLOGY: 1) Goodman and Gillman's The Pharmacological Basis of THERAPEUTICS. Laurance L. Brunton, John S. Lazo and Keith L. Parker. 11th Ed 2) Basic & Clinical Pharmacology by B.G. Katzung.11th Ed. 2. PATHOLOGY: 1) Robbins Basic Pathology. Kumar, Abbas and Aster. 9th Ed. 2) Mur's Text Book of Pathology, David A Levison et al.14th Ed.

Essential References Materials	
Electronic Materials	- Saudi Digital Library (https://sdl.edu.sa) http://www.adameducation.com/interactive-physiology
Other Learning Materials	

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	1. Lecture room suitable for students. 2. Laboratory suitable for students.
Technology Resources (AV, data show, Smart Board, software, etc.)	1. Computers, multimedia in the lecture room, PBL room, and laboratories. 2. Internet access
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	Library supplied with reference, textbooks, and electronic resources

F. Specification Approval Data

Council / Committee	PATHOLOGY DEPARTEMNT
Reference No.	4/3/44
Date	07/03/1444

Head of Pathology Department
Dr. Soliman Alsaiari