



# Course Specification

(Bachelor)

Course Title: **Pharmacology-3**

Course Code: **441 PHL-3**

Program: **Pharmaceutical Sciences**

Department: **Pharmacology**

College: **Pharmacy**

Institution: **Najran University**

Version: **1**

Last Revision Date: **24/12/2023**



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## A. General information about the course:

### 1. Course Identification

1. Credit hours: (3 (2+1) )

#### 2. Course type

A. ☐ University ☐ College ☐ Department ☐ Track ☒ Program  
B. ☒ Required ☐ Elective

3. Level/year at which this course is offered: (7<sup>th</sup> level/ 4<sup>th</sup> year)

#### 4. Course general Description:

This course deals with describing and explaining the theoretical basis and pharmacological principles of chemotherapy including antibacterial, antitubercular, antifungal, antiviral, antiprotozoal and antineoplastic drugs. In addition, the course deals with studying the pharmacological basis of endocrine pharmacology including natural and synthetic hormonal analogues, hormonal physiological effects, hormonal antagonists, hormonal synthesis inhibitors, its therapeutic uses, and adverse effects. The practical part deals with training students on studying and solving clinical cases and choice of the proper drug therapeutic protocol for topics related to chemotherapy and endocrine pharmacology.

#### 5. Pre-requirements for this course (if any):

**Pharmacology-2 (342 PHL-3)**

#### 6. Co-requisites for this course (if any):

**None**

#### 7. Course Main Objective(s):

Students after completion this course will be:

- Aware of the pharmacological basis of antibacterial, antifungal, and antiviral chemotherapy.
- Acquainted with the pharmacological principles of antiprotozoal and antineoplastic chemotherapy.
- Conversant with the pharmacological principles of natural and synthetic hormone analogs and its physiological effects.
- Knowledgeable with the pharmacological basis of hormonal antagonists and hormonal synthesis inhibitors and its clinical uses in treatment of endocrine disorders..

### 2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	60	100%
2	E-learning	-	-
3	Hybrid		
	• Traditional classroom	-	-
	• E-learning	-	-





No	Mode of Instruction	Contact Hours	Percentage
4	Distance learning	-	-

### 3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	30
2.	Laboratory/Studio	30
3.	Field	-
4.	Tutorial	-
5.	Others (specify)	-
Total		60

## B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of PLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	Knowledge and understanding			
1.1	Students after completion of this course will be able to: Describe the pharmacological basis of antibacterial, antimycobacterial, antifungal, antiviral, antiprotozoal, and anticancer chemotherapy. Besides the pharmacological basis of natural hormones and its synthetic analogs, antagonists, and hormonal synthesis inhibitors and its use in treatment of endocrine disorders.	K1	Lectures	Written exams with multiple choice questions (MCQs) and short-answer questions (Quizzes, Mid-term and Final exams)
2.0	Skills			
2.1	Select, on a clear pharmacological basis, the proper antimicrobial agent(s), its dose, dosage regimen and combination depending on its therapeutic uses	S1	Lectures Laboratory work Case studies or multimedia instruction	Written exams with multiple choice questions (MCQs) and short-answer questions





Code	Course Learning Outcomes	Code of PLOs aligned with program	Teaching Strategies	Assessment Methods
	and adverse effects for treatment of bacterial, mycobacterial, fungal, viral and parasitic infections besides the neoplastic diseases.			(Quizzes, Mid-term and Final exams) Practical Exams
2.2	Select, on a clear pharmacological basis, the proper therapeutic protocol used for treatment of different endocrine dysfunctions and hormonal contraceptives.	S2	Lectures Laboratory work Case studies or multimedia instruction Group discussion	Written exams with multiple choice questions (MCQs) and short-answer questions (Quizzes, Mid-term and Final exams) Practical Exams
3.0	Values, autonomy, and responsibility			
3.1	Demonstrate leadership, skills, in addition to accountability, confidence, and independent thinking to respond to routine or unanticipated circumstances.	V1	Lectures Practice sessions	Observation card
3.2	Professional use of computer in preparing reports, assignments, and oral presentations and to be skilled in the use of electronic library and internet resources for self-directed learning.	V2	Lectures	Assignments (using rubrics) Presentations (using rubrics)

### C. Course Content

No	List of Topics (Theory)	Contact Hours
1.	Introduction to Chemotherapy	1
2.	Sulfonamides	1
3.	Fluoroquinolones	1
4.	$\beta$ -lactam antibiotics: Penicillins	2
5.	$\beta$ -lactam antibiotics: Cephalosporins	2
6.	Aminoglycoside antibiotics	1





7.	Tetracyclines, Chloramphenicol	1
8.	Macrolide antibiotics.	1
9.	New antibiotics	1
10.	Anti-tubercular drugs.	1
11.	Antifungal agents	2
12.	Antiparasitic agents	2
13.	Anthelmintic agents	1
14.	Antiviral agents: Drug treatment of viral infections	2
15.	Introduction to hormones	1
16.	Hypothalamic & Pituitary hormones: Synthetic analogues and Antagonists	2
17.	Thyroid hormones: Synthetic analogues and antagonists	1
18.	Corticosteroid hormones: Synthetic analogues and antagonists	2
19.	Treatment of Type-1 Diabetes mellitus: Insulin and its preparation	1
20.	Treatment of Type-2 Diabetes. Oral antidiabetic drugs.	1
21.	Male Sex Hormones, anabolic steroids & its antagonists	1
22.	Female sex hormones & its antagonists	1
23.	Hormonal contraceptives	1
<b>Total</b>		<b>30</b>

No	List of Topics (Practical)	Contact Hours
1.	Introduction to chemotherapy	2
2.	Urinary tract infections (Clinical Cases)	2
3.	Upper respiratory tract infections (Clinical Cases)	2
4.	Lower respiratory tract infections (Clinical Cases)	2
5.	Treatment of Tuberculosis (Clinical Cases)	2
6.	Gastrointestinal infections (Clinical Cases)	2
7.	Topical antimicrobial agents	2
8.	Pituitary hormones (Clinical cases)	2
9.	Thyroid hormones & Thyrotoxicosis (Clinical cases)	2
10.	Corticosteroids (Clinical case)	2
11.	Practical of Diabetes mellitus (Type-I) (Clinical cases)	2
12.	Diabetes mellitus (Type-II) (Clinical cases)	2
13.	Male sex hormones & anabolic steroids	2
14.	Female sex hormones	2
15.	Contraceptive techniques	2
<b>Total</b>		<b>30</b>



## D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Quiz	5 <sup>th</sup> week	10%
2.	Midterm Exam	8 <sup>th</sup> week	20 %
3.	Practical Quiz	9 <sup>th</sup> week	5%
4.	Student Activity/Assignment/Presentation	14th Week	5%
5.	Students Observation card	Per semester	10%
6.	Final Practical Exam	16 <sup>th</sup> week	10%
7.	Final Theoretical Exam	17 <sup>th</sup> week	40%
8.	<b>Total</b>		<b>100%</b>

\*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.).

## E. Learning Resources and Facilities

### 1. References and Learning Resources

<b>Essential References</b>	B. Katzung. Basic & Clinical Pharmacology. 15th Edition by B.G. Katzung.
<b>Supportive References</b>	1. Goodman& Gilman: Pharmacological Basis of Therapeutics. 14 <sup>th</sup> Edition. 2. Katzung-Trevor. Basic & Clinical Pharmacology. 4th Edition. 3. Rang & Dale's: Pharmacology. 9 <sup>th</sup> Edition.
<b>Electronic Materials</b>	1. Pub Med 2. Science direct. 3. Medscape. 4. www.dlaf.nu.edu.sa
<b>Other Learning Materials</b>	1. Ex-pharm. 2. Drug metabolism Model. 3. Pharmacodynamics and drug receptor Model. 4. Microsoft word software.

### 2. Required Facilities and equipment

Items	Resources
<b>facilities</b> (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	1. Suitable lecture room equipped with data show and internet and sufficient number of seats. 2. Suitable laboratories equipped with health and safety tools, internet, and enough seats. 3. Blackboard collaborative system for e-learning in NU.
<b>Technology equipment</b> (projector, smart board, software)	1. Data show. 2. Computer software listed above. 3. Internet and Wifi- access
<b>Other equipment</b> (depending on the nature of the specialty)	1. Expharm 2. Pharmacal software 3. Different drug dosage forms. 4. Drug samples demonstration lab

## F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Program Leaders Students	Direct Indirect
Effectiveness of Students assessment	Faculty Department council Peer Reviewer	Direct Direct Direct
Quality of learning resources	Students Faculty	Indirect Direct
The extent to which CLOs have been achieved	Faculty	Direct
Other		

**Assessors** (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify))

**Assessment Methods** (Direct, Indirect)

## G. Specification Approval

<b>COUNCIL /COMMITTEE</b>	PHARMACOLOGY DEPARTMENT COUNCIL
<b>REFERENCE NO.</b>	COUNCIL NO. 5, 1445-1446 H
<b>DATE</b>	24/12/2023