



T-104
2022

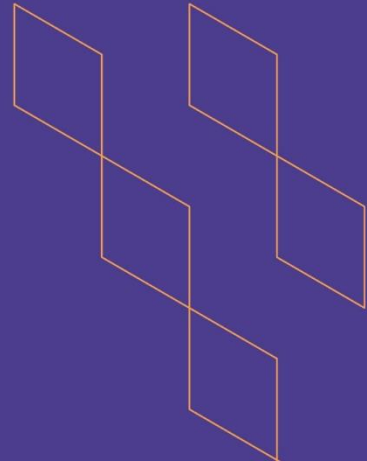
Course Specification





T-104
2022

Course Specification



Course Title: Physiology
Course Code: 242 PHL-3
Program: Pharmaceutical Sciences
Department: Pharmacology
College: Pharmacy
Institution: Najran University
Version: Version-1
Last Revision Date: 24/12/2023 H



Table of Contents:

Content	Page
A. General Information about the course	3
1. Teaching mode (mark all that apply)	3
2. Contact Hours (based on the academic semester)	3
B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods	4
Course Content	5
	6
D. Student Assessment Activities	
E. Learning Resources and Facilities	7
1. References and Learning Resources	7
2. Required Facilities and Equipment	7
F. Assessment of Course Quality	7
G. Specification Approval Data	7

A. General information about the course:

Course Identification

1. Credit hours: 3 (3+0)

2. Course type

a. University ☐ College ☒ Department ☐ Track ☐ Others ☐

b. Required ☒ Elective ☐

3. Level/year at which this course is offered:

3rd level/second year

4. Course general Description

This course provides the students the basic knowledge about the Physiology course primarily focuses on basic facts and concepts in human physiology tailored for pharmacy students which includes: organization of human body; body fluids compartments; autonomic nervous system; renal system, cardiovascular, blood components and their functions; respiratory systems, gastro intestinal tract system. functions of the central nervous system, and endocrine system.

This course is delivered in form of interactive lectures using power point presentations in addition to learning resources as reading texts, and short videos available on blackboard system.

5. Pre-requirements for this course (if any): Requirements of Health colleges track

6. Co- requirements for this course (if any): None

7. Course Main Objective(s)

This course is aimed to understand the basis of various physiological functions of the body from the cell as the smallest functional component of the body to the function of various organs, and systems. By the end of this course, the student should be able to:

- ✚ Describe different levels of human body organization, body fluid compartments, transport across cell membrane and bioelectrical phenomena of cell membrane.
- ✚ Describe the divisions and functions of autonomic nervous system, chemical transmitters, receptors, and autonomic drugs.
- ✚ Recognize the functions of different parts of nephron, the mechanism of urine formation, and importance and disorders of acid base balance.
- ✚ Describe the functions of different parts of cardiovascular system.
- ✚ Classify and describe blood components (structures, synthesis and functions) hemostasis, blood groups, anemia, and immunity.
- ✚ Describe functions and mechanisms involved in human respiration and breathing.
- ✚ Recognize the functions and the regulation of gastrointestinal tract, types of gastrointestinal secretions, GIT motility, process of digestion and absorption.
- ✚ Describe the organization and the functions of different parts of the central nervous system.
- ✚ Enumerate different functions and describe different disorders of various endocrine glands.

1. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1.	Traditional classroom	45	100%
2.	E-learning	-	-
3.	Hybrid <ul style="list-style-type: none"> • Traditional classroom • E-learning 	-	-

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

2. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	45
2.	Laboratory/Studio	-
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 CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	Knowledge and understanding			
1.1	Students after completion this course will be able to: Recognize the general cell physiology, types, and the mechanisms of membrane transport, physiological functions of the autonomic nervous system. Renal system, CVS, blood, respiratory system, GIT, CNS and endocrine system.	K1	Lectures	Theoretical exams
2.0	Skills			
2.1	Summarize the main features of cell physiology, autonomic nervous system. Renal system, CVS.	S1	Lectures	Theoretical exams
2.2	Differentiate between different physiological concepts of blood, respiratory system, GIT, CNS and endocrine system.	S1	Lectures	Theoretical exams
...				



Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
3.0	Values, autonomy, and responsibility			
3.1	Work independently, professionally, and communicate clearly by verbal and written means.	V2	Practical Classes	Observation card TBL
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.	V3	Self-directed learning	Assignment
...				

C. Course Content

No	List of Topics	Contact Hours
1.	Organization of human body (cell & its molecules –tissues- organs- organ system and organism).	1
2.	Cell membrane (channels-protein carriers-types of transport through the cell membrane)	1
3.	Transport across cell membrane physiology (Passive and active mechanisms).	1
4.	Major electrolyte composition of body fluids and concept of homeostasis	1
5.	Resting membrane potential and action potential.	1
6.	Organization of the nervous system, organization and general functions of the autonomic nervous system.	2
7.	Autonomic ganglia and neurotransmitters	1
8.	Comparison between sympathetic and parasympathetic divisions	1
9.	Cholinergic and adrenergic receptors with their agonist and antagonist	1
10.	Renal system: The homeostatic or general function of the kidneys.	2
11.	Dynamics of glomerular Filtration.	1
12.	Steps of Urine Formation, Acid base balance and its disorders	1
13.	Functions of cardiovascular system and properties of the cardiac muscle	2
14.	Cardiac cycle, Cardiac Output (COP), Recording ECG	1
15.	The vascular system and venous return, Arterial Blood pressure and its control and Measurement of blood pressure	1
16.	Blood components, cell types its function	2
17.	Determination of blood groups, Determination of bleeding and clotting time	1
18.	Platelet functions, Blood coagulation and bleeding disorders	1
19.	RBCs functions, Hemoglobin and types of Anemias	1



20.	WBCs functions, types of immunity, immune system disorders	1
21.	Respiratory system: structure, Pulmonary ventilation, Gas exchange, Lung volumes and capacities, Gas transport	2
22.	Control of ventilation; hypoxia; cyanosis, cough and bronchial asthma	1
23.	Digestive system: Functions of (Saliva - stomach - small intestine - large intestine - liver- gall bladder - bile salts).	2
24.	Some processes related to digestion (mastication, deglutition, Intestinal motility. and defecation).	1
25.	Some GIT disorders (achalasia – mega-esophagus-reflux-peptic ulcer-jaundice and vomiting).	1
26.	Central nervous system: structure, Electrophysiology of nervous system, Division of Nervous System .	2
27.	The Hypothalamus, The Cerebrum, The Cerebellum, medulla oblongata, basal ganglia.	1
28.	Physiology of sleep, Pain and its pathway.	1
29.	Neuromuscular junction, Synapse and motor disorders.	1
30.	Endocrinology: Introduction of endocrinology and hypothalamus	2
31.	Anterior pituitary gland and Posterior pituitary gland	1
32.	Thyroid & parathyroid gland and their disorders	1
33.	Suprarenal gland. Its hormones and its disorders	1
34.	Pancreas gland, Its hormones and its disorders	1
35.	Male reproductive system, hormones and disorders.	1
36.	Female reproductive system, hormones and disorders.	1
37.	Pregnancy, lactation and contraception.	1
Total		45

D. Students Assessment Activities

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

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

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	Guyton and Hall Textbook of Medical Physiology, 13th Edition by John E. Hall, Arthur C Guyton Hardcover, 1120 Pages, Published (2016) by Saunders ISBN: 978-4557-7005-2,.
Supportive References	Ganong's Review of Medical Physiology, 25th Edition (LANGE Basic Science) 25th Edition by Kim E. Barrett (Author), Susan M. Barman (Author), Scott Boitano (Author), Heddwen Brooks (Author) McGraw-Hill's (2016) ISBN 978-0-07-184897-8
Electronic Materials	1. Pub Med 2. Saudi Digital Library (https://sdl.edu.sa).
Other Learning Materials	Adam's Interactive Physiology CD Series available from http://www.adameducation.com/interactive-physiology http://www.comprehensivephysiology.com/WileyCDA/

2. Required Facilities and equipment

Items	Resources
facilities (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.
Technology equipment (projector, smart board, software)	1. Data show. 2. Computer software listed above. 3. Internet and Wifi- access
Other equipment (depending on the nature of the specialty)	1. Microsoft office package. 2. Internet access to blackboard, Saudi digital library.

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Head of departments and students	Direct Indirect (Questionnaires)
Effectiveness of students assessment	Department Faculty members and department council	Direct Direct
Quality of learning resources	Students Department faculty member	Indirect (Questionnaires) Direct
The extent to which CLOs have been achieved	Students	Questionnaires (Indirect)
Other		

Assessor (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)

Assessment Methods (Direct, Indirect)

G. Specification Approval Data

COUNCIL
/COMMITTEE

PHARMACOLOGY DEPARTMENT COUNCIL



REFERENCE NO.

COUNCIL NO. 2, 1445-1446 H

DATE

21/12/2023 H

