



مركز الاعتماد  
وَضمان الجودة  
ACCREDITATION & QUALITY ASSURANCE CENTER



**The University of Jordan**

**Accreditation & Quality Assurance Center**

## **COURSE Syllabus**

**Course Name:**

**ILO physiology Pharmacy-1**

**0551214**

1	Course title	Physiology 1
2	Course number	0551214
3	Credit hours (theory, practical)	2 (theory) two lectures per week in two different days
	Contact hours (theory, practical)	==
4	Prerequisites/corequisites	0304101, 0304111, 0304102
5	Program title	Bachelor in Pharmacy + Doctor of Pharmacy
6	Program code	???
7	Awarding institution	University of Jordan
8	Faculty	Faculty of Pharmacy
9	Department	
10	Level of course	Bachelor
11	Year of study and semester (s)	Second year, fall semester
12	Final Qualification	-
13	Other department (s) involved in teaching the course	-
14	Language of Instruction	English
15	Date of production/revision	2022/2023

#### 16. Course Coordinator:

Dr. Yanal A. Shafagoj  
 Faculty of Medicine, Room 301.  
 Variable office hours according to timetable of the coordinator, please refer to the coordinator.  
 Ext 23478 [yanals@ju.edu.jo](mailto:yanals@ju.edu.jo)

#### 17. Other instructors:

*Dr. Faisal Mohammed, Dr. Mohammad Khatatbeh , , , Dr.Salim Khraisha, Dr. Ebaa Alzayadneh*  
 Variable office hours according to timetable of the staff member, please refer to the instructor.  
[fmmmed@ju.edu.jo](mailto:fmmmed@ju.edu.jo), [malessa@ju.edu.jo](mailto:malessa@ju.edu.jo), , [l.zghoul@ju.edu.jo](mailto:l.zghoul@ju.edu.jo), [salimkh@ju.edu.jo](mailto:salimkh@ju.edu.jo),  
[e.zayadneh@ju.edu.jo](mailto:e.zayadneh@ju.edu.jo)

#### 18. Course Description:

This Physiology course will present concepts of tissue functions that will be important in understanding subsequent studies in other materials like Pathology, Pharmacology and Pharmacotherapy.

In addition to systemic functions, this course will address also integrative regulatory mechanisms responsible for maintenance of homeostasis in the normal human and the alterations which occur in these mechanisms leading to specific disease processes.

The course tackles physiological topics such as: Introduction to physiology, Transport through plasma membranes, excitability of plasma membrane, Nerve and Muscle physiology, Autonomic nervous system, Body fluids and Blood physiology, Physiology of Cardiovascular system and finally the physiology of the Respiratory system. This course is a pre-requisite for Physiology II. After knowing the normal functions of systems that will be given, the student can deduce alterations that may occur which gives him/her better understanding of pathology and pharmacology courses

## 19. Course aims and outcomes:

## A- Aims:

The main aim of this course is: Understand optimal systemic functions to keep homeostasis and mechanisms involved to perform these functions. This course will increase student's ability to analyze functional relations between systems and the mechanisms of alterations that results in generating diseases. For each section there are specific objectives that will be delivered to student by each lecturer.

**B- Intended Learning Outcomes (ILOs):** Upon successful completion of this course students is expected to:

**A. Knowledge and Understanding:**

- A1- Understand the function of cell membrane and proteins of plasma membranes and modalities of transport.
- A2- Understand the role of plasma membrane in excitable tissues and changes in ion currents according to membrane potentials
- A3- Study the contractile mechanisms of skeletal and smooth muscle cells.
- A4- Understand the divisions of Autonomic nervous system, general effects on body systems, neurotransmitters and functional receptors of the ANS and its relation with suprarenal glands.
- A5- Understand blood cells and body fluids composition and functions of all these Elements including plasma proteins.
- A6- Understand mechanisms of heart functions including heart muscle and conductive Tissue and vessels and their hemodynamics.
- A7. Understand the functions of respiratory system and mechanism of respiration

**B. Intellectual Analytical and Cognitive Skills:** Student is expected to

- B1- analyse potential alterations in transport mechanisms and changes in ionic currents according to membrane potentials.
- B2- analyse possible alterations in the functional structures of the skeletal muscle and Impact on skeletal muscle function.
- B3- Analyzing potential changes in the activity of ANS (Autonomic Nervous System) and its receptors and the impact over body systems innervated by ANS
- B4- Analyzing alterations of cellular elements of blood and composition of body fluids And plasma proteins and potential functional changes resulting by these alterations.
- B5- analyzing alterations in cardiac muscle and conductive tissue functions and Understand underlying mechanisms for generation of cardiac diseases.
- B6- analyze functional changes in vessels and mechanisms that could be involved in generating vascular diseases.
- B7- analyzing functional changes in respiratory system and impacts on homeostasis of O<sub>2</sub>, CO<sub>2</sub> and blood pH.

**C. Subject- Specific Skills:** Students is expected to

- C1- Understand Nernst equation and calculate Equilibrium potential for several ions.
- C2- Understand and analyze muscle mechanics during contraction.
- C3- Understand and analyze blood hematology, proteins and ions tests
- C4- Understand and analyze ECG and Blood pressure measurements
- C5- understand and analyze respiratory functional tests

**D. Transferable Key Skills:** Students is expected to

- D1- Evaluate the significance of information taken in Physiology for subsequent Biomedical courses
- D2- use of different resources to understand physiological process in human body.

**20. Topic Outline and Schedule:**

Topic	Week	Instructor	Achieved ILOs	Evaluation Methods	Reference
Introduction and Cell Physiology ( 2 lectures)	1	Physiology section	Cell membrane physiology and its role in maintaining cell function	MCQ exams	<u>Principle of Anatomy and Physiology</u> , By: G.J Tortora and B.H. Derickson <b><u>Latest edition</u></b>
Membrane Electrophysiology (2 Lectures)	1	As above	Origin and regulation of electrical activity in the body.	As above	As above
Nerve Cell Physiology (2 Lectures)	1	As above	Action potential development	As above	As above
Muscle Physiology (2 Lectures)	1	As above	Biological and molecular basis of muscle contractility, Muscle mechanics	As above	As above
Blood And Body Fluids (5 Lectures)	2 1/2	As above	Body fluid compartments Blood components and their functions	As above	As above
CVS (10 Lectures)	5	As above	Electrocardiology ECG Arrhythmia and conduction defects Cardiovascular mechanics Cardiac output and its control Hemodynamics Capillary exchange and venous	As above	As above

			circulation		
Respiratory Physiology (5 Lectures)	2	As above	Gas exchange Gas Transport Control of Breathing	As above	As above

### 21. Teaching Methods and Assignments:

Development of ILOs is promoted through the following teaching and learning methods:

- 1- Didactic lectures presented using overhead projectors and power point
- 2- Assigned chapters from the text book are expected to be read by students.

### 22. Evaluation Methods and Course Requirements:

Opportunities to demonstrate achievement of the ILOs are provided through the following assessment methods and requirements:

- MCQ exams designed to achieve ILO's of the course.
- Midterm 30%, Quiz 20%, Final 50%

### 23. Course Policies:

A- Attendance policies: According to rules and regulation of the University, please refer to University of Jordan Students Handbook (page 13 and 14) <http://registration.ju.edu.jo/Documents/daleel.pdf>

B- Absences from exams and handing in assignments on time: According to rules and regulation of the University, please refer to University of Jordan Students Handbook (page 16 and 17) <http://registration.ju.edu.jo/Documents/daleel.pdf>

C- Honesty policy regarding cheating, plagiarism, misbehavior:

According to rules and regulation of the University, please refer to University of Jordan Students Handbook (page 62-70) <http://registration.ju.edu.jo/RegRegulations/نظام%20تأديب%20الطبية.pdf>

D- Grading policy:

Rules are preset by the **Faculty** and Department Councils.

E- Available university services that support achievement in the course:

Main University Library, School of Medicine library, Medical Skills lab for illustration and simulation, School of Medicine Lab of Physiology.

**24. Required equipment:**

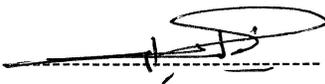
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**25. References:**

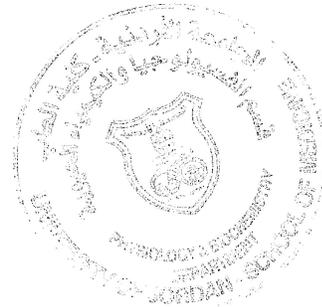
<p>A- Required book (s), assigned reading and audio-visuals: <u>Principle of Anatomy and Physiology</u>, By: G.J Tortora and B.H. Derickson Latest edition</p> <p>B- Recommended books, materials, and media:</p>
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**26. Additional information:**

Nothing
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Name of Course Coordinator: -----Signature: ----- Date: ----- Head  
of curriculum committee/Department: ----- Signature: -----  
Head of Department: ----- Signature: -----  
Head of curriculum committee/Faculty: *د. نبال سنان* Signature:  -----  
Dean: -----Signature: -----

Copy to:  
Head of Department  
Assistant Dean for Quality Assurance  
Course File



*2022, 2023*