

**Semester :**

Credit hours: 1 hour

Prerequisite: 0701364

Lecture:



**Zarqa University**  
**Faculty of Allied Medical Sciences**  
**Department of medical Technology**  
**Practical Human Physiology (0701361)**

**Instructor & Coordinator:**

Office #:

Office hours:

**Course description:** This course covers the basic principles of practical human physiology. The topics in this course are divided into two parts; the first part includes the study of physiology briefly; chemical composition of the body, cell membrane functions. The second part of this course focuses on tests for different body systems including nervous systems, circulatory system, respiratory system, urinary system, and blood physiology. This course will cover the mechanisms of how these systems are function.

**Aims of the course:** During this course the students are directed to explore the function of different human body systems, and to learn the way by which these systems' functions can be detected practically.

**Intended Learning Outcomes: (ILOs)**

**A. Knowledge and Understanding**

**A1. Concepts and Theories:**

- Define the term *physiology* for cell membrane with its corresponding function in practice.
- Learn about the main functions of different body organs and systems.
- Learn about the Integration of the organ systems to maintain constancy of the internal environment.
- Explore the regulation of human reflexes.
- Know about the role of the Nervous System in human sense organs.
- Learn about changes in bodily function through the life span.

**A2. Contemporary Trends, Problems and Research:**

- Ability to explain physiological mechanisms by applying basic principles of them.
- Develop a functional knowledge of the basic nomenclature and conventions used to study human physiology, review the fundamentals of cell biology and selected tissues of the body.



### **A3. Professional Responsibility:**

- Use verbal and graphics and models and tools for explain the concepts and Encourage public discussion of physiological issues.
- Applying specific tests in laboratory for many body system.

## **B. Subject-specific skills**

### **B1. Problem solving skills:**

- Effectively solve basic problems in Physiology, working independently and in groups.
- Ability to analyze, growth and morphological literature and arguments and concepts therein
- Demonstrate competence in differentiating terms relating to the body systems.

### **B2. Modeling and Design:**

- Connecting students with different sources of information and encourage students to solve many tasks during each chapter.

### **B3. Application of Methods and Tools:**

- Apply knowledge of functional mechanisms and their regulation to explain the physiology underlying common diseases.
- Identify and utilize appropriate reference resources to clarify and expand knowledge of Physiology.

## **C. Critical-Thinking Skills**

### **C1. Analytic skills:**

- Ability to extract and integrate key concepts from primary research material.
- Written communication of difficult concepts.
- Capacity to write clearly and concisely under time constraints.
- Proficiency in identifying key material in the scientific literature.
- Ability to undertake project work independently.

### **C2. Strategic Thinking:**

- Understand the ‘big picture’ of how systems work together and reconstruct the information in any suitable setting.

### **C3. Creative thinking and innovation:**

- Use a wide range of idea creation techniques (such as brainstorming)
- Create new and worthwhile ideas (both incremental and radical concepts)
- Elaborate, refine, analyze and evaluate their own ideas in order to improve and maximize creative efforts.

## D. General and Transferable Skills (other skills relevant to employability and personal development)

### D1. Communication:

- Effectively communicate clearly and accurately about physiological issues in both oral and written form.

### D2. Teamwork and Leadership:

- Fostering an ability to collaborate effectively with others on scientific projects, leading to a productive outcome.

### Course structures:

Week	Credit Hours	ILOs	Topic	Teaching Procedure	Assessment methods
1	1	A1,B2, C2,D2	Introduction and general instructions	Lecture, oral inquiry, model and chart	Class participation, homework and discussion
2	1	A1,B3, C1,D2	Movement across cell membrane	Lecture, oral inquiry, model and chart, practical tests	Class participation, homework, reports and discussion
3	1	A3,B2, C2,D1	Introduction to Blood Physiology: Hematocrit Estimation (PCV), ABO grouping, Coagulation and Bleeding Time	Lecture, oral inquiry, model and chart, practical tests	Class participation, homework, reports and discussion
4	1	A3,B3, C1,D1	Red Blood Cell Count	Lecture, oral inquiry, model and chart, practical tests	Class participation, homework, reports and discussion
5	1	A2,B2, C3,D1	White Blood Cell Count	Lecture, oral inquiry, model and chart, practical tests	Class participation, homework, reports and discussion
6	1	A2,B2, C3,D1	Nervous System I: Human Reflexes	Lecture, oral inquiry, model and chart, practical tests	Class participation, homework, reports and discussion
Midterm Exam					
7	1	A3,B3, C2,D2	Nervous System II: Human Sense Organs	Lecture, oral inquiry, model and chart, practical tests	Class participation, homework, reports and discussion



<b>9</b>	1	A2,B1, C3,D2	Urinary system (Urine Analysis)	Lecture, oral inquiry, model and chart, practical tests	Class participation, homework, reports and discussion
<b>10</b>	1	A1,B1, C3,D1	Circulatory System (ECG and blood Pressure)	Lecture, oral inquiry, model and chart, practical tests	Class participation, homework, reports and discussion
<b>11</b>	1	A3,B2, C1,D1	Respiratory System (Volumes, Hyperventilation and Rebreathing)	Lecture, oral inquiry, model and chart, practical tests	Class participation, homework, reports and discussion
<b>12</b>	1	A2,B2, C3,D2	<b>Lab Revision</b>	Lecture, oral inquiry, model and chart	Class participation, and discussion
Final exam					

### References:

#### Main Textbook:

**Human Anatomy & Physiology (9<sup>th</sup> edition)** by Elaine N. Marieb and Katja Hoehn. *Published by Pearson, 2012.*

#### Supplementary Textbook(s):

- Vander, Sherman, Luciano's **Human Physiology: The Mechanisms of Body Function (9<sup>th</sup> edition)** by Eric P. Widmaier, Hershel Raff and Kevin T. Strang. *Published by McGraw-Hill, 2004.*
- Any available physiology book.
- Lecture handouts (the lecture handouts for each topic will be available on moodle during the semester).
- Relevant information from the internet.

#### Suggested websites:

1. <http://www.innerbody.com/>
2. <http://www.getbodysmart.com/>
3. <http://www.teachpe.com/anatomy/>
4. <http://www.visiblebody.com/ap/pc/>
5. [http://wps.aw.com/bc\\_marieb\\_echap\\_8/](http://wps.aw.com/bc_marieb_echap_8/)

### Assessment Methods:

Methods	Grade	Date
Midterm Exam	35 %	
Attendance, Participation and reports	15 %	
Final Exam	50 %	(To be confirmed later)

