



Philadelphia University
Faculty of pharmacy
Department of clinical sciences
First semester, academic year 2017-2018

Course syllabus

Course title: physiology2	Course code: 0510232
Course level: 2nd year	Course prerequisite (s) and/or corequisite (s): Physiology 1/ 0510231
Lecture time: 8.10-9; 10.10-11 ح 12.45-13.45 ن	Credit hours: 2 hours
	Contact hours: 6
Location:	Faculty of pharmacy

Academic Staff

Specifics

Name	Rank	Office number and location	Office hours	E-mail address
Dr.Awni khrais	Ass.prof.	Faculty of pharmacy	1200-1400	

Course description (According to the University Catalogue)

The course is designed for pharmacy students and it provides them with knowledge regarding the functions and different physiological mechanisms of many systems in human body. These are cardiovascular system covering electrical and mechanical properties of the heart. 'Physiology of the pulmonary and systemic circulation and blood pressure with various regulatory mechanism of this system'. Also this course includes physiology of the respiratory system encompassing mechanism of breathing, lung volumes and capacities and regulation of blood gases. Furthermore, the course covers physiology of the central nervous system highlighting the functions of different regions of the brain and the endocrine physiology with general classification of the hormones and the different endocrine glands producing them. Finally the course also includes physiology of special senses (vision, hearing taste and smell).

Course objectives:

The aim of this course is to introduce the students to the basic mechanisms and functions of cell organs and systems and their relation and findings which have been studied by students previously (anatomy and biology)

Course/ resources

- **Text book/ books (title , author (s), publisher, year of publication)**

Introduction to Human physiology Laura Lee Sherwood 8Th edition international edition copyright 2013.

References

1. **Text Bookof Medical physiology By Guyton& Hall. publisher Philadelphia Saunders 13th ed.(2014)**
2. **Human physiology 14th edition 2016 by Stuart Fox www.Mhhe.com Fox 11.**

- **Support material (s) (vcs, acs, etc).**

- **Study guide (s) (when applicable)**

- **Laboratory Handbook/ books (when applicable)**

Teaching methods(Lectures, discussion groups, tutorials, problem solving, debates, etc)

Lectures, discussion groups

Learning outcomes:

- Knowledge and understanding

At the end of the course students will have:

- 1- Knowledge about the physiological principles and mechanism of actions in cardiovascular system, respiratory system , central nervous system , endocrine system and special senses.
 - 2- Explanation about the relationship between a variety of functions (in the above mentioned systems) and the anatomical and histological characters of the organs in those systems
 - 3- Ability to make better understanding for pathophysiological mechanisms of a different diseases which will be covered by pathophysiology course.
- Cognitive skills (thinking and analysis).

At the end of the course students will be able to:

- 1- Analyze the normal physiological mechanisms of the systems covered by the course
 - 2- Make a relationship between the anatomical and histological characters of the organs (in the above mentioned systems) and their functions
- Communication skills (personal and academic).

At the end of the course students will be able to

engage with group work for doing certain scientific activity in physiology and research activity

- Transferable Skills.
 - At the end of the course students will be able to

Understand and deal with pharmacology science and pathophysiology

- Psychomotor Skills (When applicable)

Assessment instruments

- Exams (First, Second and Final Exams)
- Quizzes.
- Short reports and/ or presentations, and/ or Short research projects
- Homework assignments

<u>Allocation of Marks</u>	
Assessment Instruments	Mark
First examination	20
Second examination	20
Final examination: 50 marks	40
Reports, research projects, quizzes, homework, Projects	20
Total	100

Documentation and academic honesty

- Documentation style (with illustrative examples)

Whenever applicable students should conduct their assignments themselves whether individually or in group work referencing all information data figures and diagrams taken from literature. The references should be given according to the acceptable format.

- Protection by copyright

Students should realize that some published information or data are the property their authors and they are not allowed to use without asking permission from the originators.

- Avoiding plagiarism.

Plagiarism is the unauthorized use or close imitation of the language and thoughts of another author and the representation of them as ones own original work without proper acknowledgment of the author or the source. students must pursue their studies honestly and ethically in accordance with the academic regulations. Cheating in exam and plagiarism are totally unacceptable and those who intentionally commit such acts would be subjected for penalties according to the university regulations.

Course/ academic calendar

week	Basic and support material to be covered	Homework/reports and their due dates
(1)	Physiology of CVS: Heart, Blood Vessels, pulmonary circuit, Main Functions of circulation, cardiac conducting system physiology of CVS Electrocardiography, Electrical activity of the heart, Pacemaker potential, SA node. Action potential Intrinsic control of heart beat, cardiac action potential.	
(2)	Cardiac output, stroke volume control of cardiac output, action potential of cardiac cell, Blood flow and velocity, Heart sounds, control of heart rate, Blood pressure its control. Cardiac cycle Frank- starling law of the heart.	
(3)	Physiology of respiratory system: External respiration internal respiration Mechanism of breathing conducting airways Respiratory zone, Alveoli, Surfactant Infant respiratory distress syndrome.	
(4)	Physiology of respiratory System: Boyles law pulmonary Function tests Gas exchange in the lungs Regulation of respiration: Lung volumes and capacities.	
(5)	Physiology of blood gases Chemical control of breathing Hypercapnia Respiratory Acidosis hypocapnia Hemoglobin and O ₂ transport Types of hemoglobin oxygen Binding ability of hemoglobin Co ₂ transport in blood.	
(6) First examination	Physiology of CNS: organization of the CNS and Role in homeostasis cranial Nerves, Meninges, Ventricular System of brain and csf.	
(7)	Physiology of CNS: Forebrain, Cerebrum cerebral cortex Basal Nuclei functions , Parkinsonism.	
(8)	Physiology of CNS: Diencephalon, Thalamus, Hypothalamus, Epithalamus, Brainstem, Medulla oblongata Pons, Midbrain.	
(9)	Physiology, of CNS: Cerebral Cortex Motor and sensory Association areas	
(10)	Physiology of CNS: Basal Ganglia, cerebellum, language (speech areas) Reticular Formation, Spinal Cord and its tracts.	
(11) Second examination	Physiology of special senses the Eye and vision Refraction Accommodation, visual acuity, Myopia, hypermetropia, Astigmatism, Retina: Effect of light on rods Electrical activity of the retinal Cells cons color vision.	

(12)	The ear and hearing outer ear Middle ear, cochlea spiral organ organ of corti neural pathways Of hearing, Hearing impairment, Vestibular Equilibrium Sensory hair cells Of the vestibular apparatus Utricle(neural pathway), Nystagmus vertigo Physiology of taste and smell. Chemical senses, Tongue and taste, Structure of taste bod.	
(13)	Physiology of endocrine system Classification of hormones Polarity of the hormones Mechanisms of Hormone actions.	
(14)	Physiology of endocrine system Posterior pituitary Hypothalamic control of Posterior pituitary oxytocin and ADH, Anterior pituitary hormones,.	
(15)	Physiology of endocrine system: Adrenal cortex hormones, Adrenal medulla hormones Stress and adrenal glands Thyroid gland hormones.	
(16) Final Examination	Parathyroid hormones islet of Langerhan insulin Glucagon, Pineal gland, sex hormones.	

Expected workload:

On average students need to spend 2 hours of study and preparation for each 50-minute lecture/tutorial.

Attendance policy:

Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

Other Education Resources

Books

Review of medical physiology By William F Ganong CD 2015

Journals

Am .J. of physiology

Websites

www.freemedicaljournals.com

www.ahajournals.org

www.oxfordjournals.org

www.wikipedia.org