



Philadelphia University
Faculty of nursing
Second semester, academic year 2020/ 2021

Course syllabus

Course title: Physiology (1)	Course code: 0910145
Course level: Second year	Course prerequisite (s) and/or corequisite (s): Anatomy and Histology 0910142
Lecture time	Credit hours: 3 hours
	Contact hours: 3 hours
Location:	Microsoft teams

Academic Staff
Specifics

Name	Rank	Office number and location	Contact hours	E-mail address
Dr Emar Alsaleh	Assistant professor	Third Floor Nursing Department	As scedualed	ealsaleh@philadelphia.edu.jo

Course module description

The course is designed for nursing students and it introduces them to the science of physiology by defining the concept of physiology and the term homeostasis and its importance to the human body to achieve normal function.

This course also provides the students with knowledge about the function of blood , neurons, peripheral nervous system , muscles (skeletal, smooth and cardiac) , gastrointestinal system, respiratory system, liver, renal system and fluid acid-base balance.

Furthermore, the students are exposed to short review pf anatomical and histological characters of particular importance to the above mentioned functions.

Course objectives:

The course is designed for nursing students and it introduces them to the science of physiology by defining the concept of physiology and the term homeostasis and its importance to the human body to achieve normal function.

Course/ resources

Text Book

Introduction to Human physiology Lauralee Sherwood 9th edition international edition copyright 2016.

References

1. Text Book of Medical physiology By Guyton & Hall publisher Philadelphia Saunders 13th ed .(2014)
2. Fundamental of Anatomy and Physiology. 10th edition. By Martini. .2 Nath. Partholomeow (2015)

Teaching methods:

- 1- **Online lectures on Microsoft teams,**
- 2- **discussion groups, problem solving, case studies, pre lecture reading work.**
- 3- **Supportive materials: reading articles, book chapters, videos and questions**
- 4- **Assignments and critical thinking work.**

Learning outcomes:

A) Knowledge and understanding

At the end of the course students will have:

A1- Information about the functional principles; and mechanisms; of action of the above mentioned systems and building further functional anatomical and histological relationship which have been studied previously by students.

A2- Better understanding of physiology subjects.

B) Intellectual skills (thinking and analysis).

At the end of the course students will be able to

B1. Compare the normal physiological mechanisms with abnormal ones

B2. Analyze the normal physiological mechanisms

C) Professional and practical skills

C1. Ability to define an formulate physiology of different body systems

C2 Confidence and competence in identifying and interpreting body physiology

C3) Bibliographic skills including the ability to identify and use key resources to identify and manage physiology health problem according to understanding normal physiology.

C4) Work effectively with other

- C5) Use online learning websites for learning

D) Transferable Skills

D1) Generalize principles learned of physiology in different body systems, cases and in different clinical settings.

D2) Generate solutions to physiology effects situations utilizing principles learned through the course.

D3) Engage with group work and self pre lecture work for doing certain scientific activity in physiology.

Assessment instruments

- Exams (Midterm and Final Exams)
- Quizzes.
- Short reports and/ or group work and discussion.
- Homework assignments

<u>Allocation of Marks</u>	
Assessment Instruments	Mark
Midterm examination	30
Final examination: 50 marks	50
Reports, quizzes, homework	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 it 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 one's 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
(1)	Introduction to physiology General concepts, structural and functional organisation The cell and its function, homeostasis
(2)	Cell and tissue structure
(3)	Integumentary system
(4)	Blood & Circulation: Functions of the circulatory system; Major components of the circulatory system; Composition of the blood; plasma; Formed elements of blood; Hematopoiesis; Regulation of Erythropoiesis; White blood cells types and Functions
(5)	Red blood cell antigens and blood typing; ABO system; Transfusion reaction; Rh Factor; Blood clotting; factors : formation of fibrin; Dissolution of clots; Anticoagulants. Hemolytic Diseases. Bleeding disorders. Capillary Exchange. Acid-Base Balance of the Blood.
(6)	Physiology of respiratory system Resp airways, the lungs, pulmonary ventilation, air movemnets and pressure, pulmonary compliance, gas exchange, diffusion of gases, pulmonary blood flow, regulation of respiration.
(7)	Heart physiology
(8)	Physiology of GIT functions of Mouth, salivary glands, pharynx, Small intestine. Physiology of GIT: Digestion and absorption of Nutrients, carbohydrate, proteins AND lipids
(8)	GIT function large intestine and rectum, defecation reflex Liver and pancreas importence of bile Functions of pancreatic

	Enzymes and its roles In digestion
(9)	THE NERVOUS SYSTEM (NEURONS & SYNAPSES): Neurons & supporting cells; Electrical activity in axons; Action potentials; All or none law; Synapse; Electrical & chemical Synapses;
(10) First examination	Action of neurotransmitter; Acetylcholine; Chemically Regulated channels; Ligand- Operating channels; G-Protein- Operating channels; Acetyl cholinesterase
(11)	THE AUTONOMIC NERVOUS SYSTEM: Neural control of the Autonomic Nervous; Division; Collateral ganglia; Adrenal glands; parasympathetic division.
(12)	Functions of the Autonomic Nervous system; Adrenergic & Cholinergic transmission; Responses to adrenergic Stimulation; Responses to Cholinergic Stimulation; Organs with dual innervation
(13)	PHYSIOLOGY OF THE KIDNEYS. Structure & function of the Kidneys: Gross structure of the Urinary system; Micturition Reflex; Microscopic structure; Nephron tubules. Glomerular filtration: Physiology of glomerular Filtration rate; Sympathetic Nerves effects
(14)	Collecting duct: Effect of ADH. Renal plasma clearance: Transport process affecting Renal clearance; Tubular Secretion of drugs; Renal Clearance of insulin: Measurement of GFR; Clearance Calculations; Clearance of urea; Clearance Of PAH: measurement of renal Blood flow; Reabsorption of glucose; Glycosuria.
(15)	Skeleton system
(16)	Muscle physiology

(16)	Final exam
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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