Philadelphia University	PHILADELPHIA UNIVERSITY THE WAY TO THE FUTURE	Approved Date: 10/2024
Faculty: Pharmacy		Issue: 1
Department: Pharmacy		Credit Hours: 2
Academic Year:2025/2026	Course Syllabus	Bachler

Course Information

Course No.	Course Title	Prerequisite
0521215	Anatomy and physiology 2	Anatomy and physiology 1 (0521122)

Course Type	Class Time	Room No.
☐ Univirsity Requirement ■ Fauclty Requirement ☐ Major Requirement ☐ Elective ■ Compulsory	Sec 1: Sun, Tue: 11:15-12:05	620

Course Level*				Hours		
4th	5th	6th	7th ■	Contact	Independent Learning	Assessment
☐	☐	☐		30	27	3
				Total: 60		

*According to JNQF standards

Instructure Information

Name	Office No.	Phone No.	Office Hours	E-mail
Ms. Asma El-Shara	Faculty of Pharmacy 5601/4	+96226374 44 Ext: 2641	Sat, Mon 11:15-12:30	aelshara@philadelphia.edu.jo

Course Delivery Method

☐ Blended	☐ Online	■ Physical
Learning Model		
Percentage	Synchronous	Asynchronous	Physical
	0	0	100%

Course Description

The course is designed to provide the students with knowledge about the normal anatomy and functions, and mechanism of various physiological systems basis on the anatomical and histological correlation, including an introduction to human physiology and enable the student to understand future courses as pathophysiology. It includes Introduction to physiology 2 course, Anatomy and physiology of cardiovascular system, Anatomy and physiology of Respiratory system, Anatomy and physiology of Central nervous system, anatomy and Physiology of special senses: eye and ear, Anatomy and physiology of endocrine system.

Course Learning Outcomes

		Program Outcomes
Knowledge		
K1	Define appropriate terminology related to anatomy and physiology.	KP1
K2	Explain the anatomical structures and the physiological functions of body systems.	KP1
K3	Recognize the functional principles of physiology; and mechanisms of action of the body systems	KP1
K4	Predict physiological consequences and features of anatomical structures.	KP1
K5	Discuss the interrelationships within and between anatomical and physiological systems of the human body.	KP1
Skills		
S1	Compare the normal physiological mechanisms with abnormal ones	SP1
S2	Analyze information in the relevant literature.	SP2

Learning Resources

Course Textbook	Principles of Anatomy and Physiology, 15th Edition by Gerard J. Tortora, Bryan H. Derrickson, Publisher: Wiley, (2017), ISBN: 978-1-119-39993-3
Supporting References	1. Human Anatomy 6th edition By Michael McKinley and Valerie O'Loughlin and Ronald Harris and Elizabeth Pennefather-O'Brien. Publisher : McGraw Hill; (2020) ISBN-10: 1260251357.ISBN-13 : ISBN: 978-1260251357 2. Atlas of human anatomy 6th edition By Frank H. Netter, Publisher: Elsevier, (2014) ,978-0-8089-2451-7 3. Ross and Wilson Anatomy and Physiology in Health and Illness, 10the Edition by Anne Waugh BSc(Hons) MSc CertEd SRN RNT FHEA (Author), Allison Grant BSc PhD RGN (Author). ISBN-13: 978-0443101014; ISBN-10: 0443101019 4. Human Anatomy , 8th Edition By Marieb, Elaine, Wilhelm, Patricia Brady, & Mallatt, Jon, Harlow: Pearson Education Limited (2017), ISBN: 978-1-292-15679-8 . 5. Human anatomy and physiology by Amerman, Erin C. Harlow: Pearson Education Limited, (2016), ISBN: 978-1-292-11233-6 .
Supporting Websites	www.scinecedirect.com, www.youtube.com
Teaching Environment	■ **Classroom** ☐ **laboratory** ☐ **Learning Platform** ☐ **Other**

Meetings and Subjects Time Table

Week	Topic	Learning Method*	Task	Learning Material
1	**The vision and mission of Pharmacy Faculty** **Course syllabus** Introduction to physiology 2 course	Lecture		Vision and Mission of faculty of pharmacy Course syllabus Text Book
2	**Anatomy of cardiovascular system**	Lecture		Text Book

3 **4**	**Physiology of cardiovascular system** Physiology of CVS: Heart, Blood vessels, pulmonary circuit, Main functions of the CVS, Cardiac conducting system, Physiology of CVS: Electrocardiogram, Electrical activity of the heart pacemaker, potential Anode, **cardiac** output, stroke volume, control of cardiac output of action potential of cardiac cell, Blood flow and velocity, Heart sounds, control of heart rate, Blood pressure its control.	Lecture	Quiz Problem solving assignment	Text Book
5	**Anatomy of respiratory system**	Lecture		Text Book
6 **7**	**Physiology of respiratory system**: External respiration, internal respiration, Mechanism of breathing, conducting airways, Respiratory zone, Alveoli, Surfactant. Boyles low, Pulmonary function tests, Gas exchange in the lungs, Regulation of respiration. Physiology of blood gases: chemical control of breathing, hypercapnia, Respiratory acidosis, Hypocapnia, Haemoglobin and O2 transport, types of haemaglobin, oxygen binding ability of haemaglobin, Co2 transport in blood.	Lecture Collaborative learning	Problem solving assignment Video assignment	Text Book
8	**Anatomy of CNS**	Lecture	Quiz	Text Book
9 **10**	**Physiology of CNS** Organization of the CNS and its role in homeostasis, cranial nerves, Meninges, Ventricular system of brain and CSF, Forebrain, cerebrum, cerebral, cortex, Basal nuclei.	Lecture	Problem solving assignment	Text Book
11	**Physiology of CNS:** Diencephalon, Thalamus, Hypothalamus, Epithalamus, Brainstem, Medulla oblongata, pons, Midbrains. Cerebral cortex, Motor area, Sensory area, Motor and sensory association area's Gross structure of the Urinary system Basal ganglia cerebellum, language (speech areas), Reticular Formation, Spinal cord and its tracts.	Lecture Collaborative learning	Problem solving assignment	Text Book
12	**Anatomy of Endocrine system**	Lecture	Home work	Text Book
13	**Physiology of Endocrine system** Classification of hormones, Polarity of the hormones, Hormones, Mechanisms of hormone actions.	Lecture	Problem solving assignment	Text Book

	Posterior pituitary, Hypothalamic control of posterior pituitary oxytocin and ADH, Anterior pituitary hormones, Hypothalamic- pituitary Gonad axis. Adrenal cortex hormones, Adrenal medulla hormones, stress, and adrenal glands, Thyroid gland hormones, Parathyroid hormones, islet of Langerhans, insulin, Glucagon, Pineal gland, sex hormones.			
14	**Anatomy of special senses**	Lecture		Text Book
15	**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 concolor vision. The ear and hearing Outer ear, middle ear, cochlea, spiral organ" organ of corti", neural pathways of hearing, Hearing impairment, vestibular apparatus, equilibrium, Sensory hair cells of the vestibular apparatus. Utricle and saccule, semicircular canals, utricle (neural pathway), nystagmus, vertigo physiology Sense of taste and smell.	Lecture	Problem solving assignment	Text Book
16	**Final Exam**			

*Includes: lecture, flipped Class, project-based learning, problem solving based learning, collaboration learning.

Course Contributing to Learner Skill Development

Using Technology
• Use PowerPoint or any other relevant programs for preparing presentations. • Use variety of electronic databases in searching for published data.
Communication Skills
• Report writing • Oral presentation of selected topics
Application of Concept Learnt
• Students will apply most of the acquired knowledge from the theoretical lectures in the physiology • The theoretical information also allows them to be able to perform a research and experimental work

*Includes: lecture, flipped Class, project-based learning, problem solving based learning, collaboration learning

Assessment Methods and Grade Distribution

Assessment Methods	Grade	Assessment Time (Week No.)	Course Outcomes to be Assessed
Mid Term Exam	**30%**	**11**	**K1-K3, S1**
Term Works*	**30%**	**Continuous**	**S1-S2**
Final Exam	**40%**	**16**	**K1-K5, S1-S2**

* Include: quizzes, in-class and out of class assignment, presentations, reports, videotaped assignment, group or individual project.

Alignment of Course Outcomes with Learning and Assessment Methods

Number	Learning Outcomes	LearningMethod*	AssessmentMethod**
	Knowledge		
K1	Define appropriate terminology related to anatomy and physiology.	**Lecture**	**Subjective Quiz** **Exam/subjective Questions**
K2	Explain the anatomical structures and the physiological functions of body systems.	**Lecture,** **Collaborative learning** **Problem solving based learning**	**Subjective Quiz** **Exam/subjective Questions**
K3	Recognize the functional principles of physiology; and mechanisms of action of the body systems	**Lecture** **Collaborative learning** **Problem solving based learning**	**Subjective Quiz** **Exam/subjective Questions**
K4	Predict physiological consequences and features of anatomical structures	**Lecture** **Collaborative learning** **Problem solving based learning**	**Subjective Quiz** **Exam/subjective Questions** **Short report**

K5	Discuss the interrelationships within and between anatomical and physiological systems of the human body.	**Lecture** **Collaborative learning** **Problem solving based learning**	**Subjective Quiz** **Exam/subjective Questions** **Videotaped assignment**
Skills			
S1	Compare the normal physiological mechanisms with abnormal ones	**Collaborative learning**	**Exam/subjective Questions**
S2	Analyze information in the relevant literature		

*Include: lecture, flipped class, project-based learning, problem solving based learning, collaboration learning.
** Include: quizzes, in-class and out of class assignments, presentations, reports, videotaped assignments, group or individual projects.

Course Polices

Policy	Policy Requirements
Passing Grade	The minimum pass for the course is (50%) and the minimum final mark is (35%).
Missing Exams	• Anyone absent from a declared semester exam without a sick or compulsive excuse accepted by the dean of the college that proposes the course, a zero mark shall be placed on that exam and calculated in his final mark. • Anyone absent from a declared semester exam with a sick or compulsive excuse accepted by the dean of the college that proposes the course must submit proof of his excuse within a week from the date of the excuse's disappearance, and in this case, the subject teacher must hold a compensation exam for the student. • Anyone absent from a final exam with a sick excuse or a compulsive excuse accepted by the dean of the college that proposes the material must submit proof of his excuse within three days from the date of holding that exam.
Attendance	The student is not allowed to be absent more than (15%) of the total hours prescribed for the course, which equates to six lecture days (n t) and seven lectures (days). If the student misses more than (15%) of the total hours prescribed for the course without a satisfactory or compulsive excuse accepted by the dean of the faculty, he is prohibited from taking the final exam and his result in that subject is considered (zero), but if the absence is due to illness or a compulsive excuse accepted by the dean of the college that The article is introduced, it is considered withdrawn from that article, and the provisions of withdrawal shall apply to it.

Academic Integrity	Philadelphia University pays special attention to the issue of academic integrity, and the penalties stipulated in the university's instructions are applied to those who are proven to have committed an act that violates academic integrity, such as cheating, plagiarism (academic theft), collusion, intellectual property rights.

Program Learning Outcomes to be Assessed in this Course

Number	Learning Outcome	Course Title	Assessment Method	Targeted Performance level

Description of Program learning Outcomes Assessment Method

Number	Detailed Description of Assessment

Assessment Rubric of the Program Learning Outcomes
