

جامعة كل العرب

Faculty : Pharmacy
Department: Clinical Pharmacy and Therapeutics
Academic Year: 2020/2021
Semester : First semester

(Course Syllabus)

Subject Name	Credit Hours	Course No.	Prerequisite	Concurrent course
Physiology (1)	2	906210	906120 Anatomy and histology	----

Coordinator Name	Lecturer/s	Room No.	E-mail	Course website	Office Hours
Dr. Muna Barakat	Dr. Rana Abu Farha Dr. Muna Barakat	4204 4218	r_abufarha@asu.edu.jo m_barakat@asu.edu.jo	ASU Biosystem Microsoft Teams	TBA

Course Description

This course is designed to provide the student with the principles of homeostasis, control system mechanisms and regulatory feedback systems. The course aims to enable the student to understand the correlations between human body organs' functions and their complementarities. Physiology (1) covers the following systems: cardiovascular, respiratory and digestive systems.

Course Objectives

1. Students should be able to explain interrelationships among molecular, cellular, tissue and organ functions in each system.
2. Students should be able to understand the physiological anatomy of the heart
3. Students should be able to understand the pulmonary and systemic circulation of the heart.
4. Students should be able to know the functional structures of the gastrointestinal system.
5. Students should be able to identify the functional structures of the respiratory system.

Intended Learning Outcomes

Following the successful completion of this course, the student should be able to:

A. Knowledge and understanding:

- A1. Explain the contributions of organs and systems to the maintenance of homeostasis
- A2. Identify the causes and effects of homeostatic imbalances.
- A3. Understand the physiological anatomy of the heart and distinguish the cardiac



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muscle cell microstructure

A4. Understand the pulmonary and systemic circulation of the heart.

A5. Understand the correlation between ECG and cardiac cycle.

A6. Understanding factors affecting cardiac output, heart rate and arterial blood pressure.

A7. Know the functional structures of the gastrointestinal system.

A8. Explain the functional mechanisms (motilities, secretions, digestion and absorption) of the gastrointestinal tract and their regulation.

A9. Identify the functional structures of the respiratory system.

A10. Understand the Mechanism of Inspiration and Expiration processes.

A11. Recognize Surface tension and the role of surfactant.

A12. Understand the exchange and transport of gases during the respiration process.

A13. Describe the role of the respiratory centers in controlling respiration.

B. Subject-specific skills:

B1. Apply the learned physiological information in understanding the reason for the occurrence of different diseases.

B2. The ability to integrate the effect of nervous system regulation on the three studied systems collectively (cardiovascular, gastrointestinal and respiratory).

C. Cognitive and Intellectual skills:

C1. Prediction in the change of cardiac output based on changes in preload, contractility, afterload, and heart rate.

C2. Correlation between ECG Wave changes and some of the cardiac abnormalities.

C3. Diagnosing respiratory diseases based volume changes during spirometric testing

D. Transferable Skills:

D1. Evaluate the significance of information taken in Physiology for subsequent Biomedical and pharmaceutical courses

Teaching and Learning Methods:

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

ILOs	Learning Methods	Evaluation Methods
All ILOs	Lectures Educational Videos Computer-assisted instruction	Multiple-choice exams

Learning skills:

- Critical thinking by enhancing their ability to define, describe, classify, and explain different physiological related issues.

- Creative thinking by enhancing their ability to figure out possible solutions for some of the pathophysiological problems based on their understanding of some physiological concepts.



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Course Content:

Week	Date	Lecture number	Topic's Details	Exams/ /quizes/ holidays	Main Reference (chapter)	ILOs achieved
1	Oct 2020	1	Course outline, objectives, outcomes, references and grading system		----	-----
1	Oct 2020	2	Introduction to Physiology: Homeostasis, control systems, negative & positive feedback mechanism		Ch 1 Tortora	A1, A2, B2
2	Oct 2020	3, 4	Physiological anatomy of the heart		Ch 20 Tortora	A3, A4
3	Oct 2020	5, 6	The conducting system of the heart		Ch 20 Tortora	A3, B1
4	Nov 2020	7, 8	The electrocardiogram ECG		Ch 20 Tortora	A5, B2, C2, D1
5	Nov 2020	9, 10	The cardiac cycle		Ch 20 Tortora	A5, C1
6	Nov 2020	11, 12	Cardiac output		Ch 20 Tortora	A6, B1, B2
7	Nov 2020	13, 14	The control of heart rate		Ch 20 Tortora	A6, B1, B2, D1
8	Dec 2020	15, 16	Mean arterial blood pressure		Ch 20 Tortora	A6, B1, B2, D1
MID EXAM						
9	Dec 2020	17, 18	Overview of the digestive system		Ch 24 Tortora	A7

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10	Dec 2020	19, 20	Gastrointestinal Tract Functions	Ch 24 Tortora	A8, D1
11	Dec 2020	21	Pulmonary Ventilation	Ch 23 Tortora	A9, A10
11	Dec 2020	22	Lung volumes and capacities	Ch 23 Tortora	A11, B1, C3, D1
12	Jan 2021	23, 24	Exchange of Oxygen and Carbon Dioxide	Ch 23 Tortora	A12
13	Jan 2021	25, 26	Transport of Oxygen and Carbon Dioxide	Ch 23 Tortora	A12
14	If time available	27, 28	Regulation of Pulmonary Function	Ch 23 Tortora	A13, B1, B2, D1
FINAL EXAM					

Grade Distribution:

Your course grade will be determined by the following:

Assessment Method	% of Final Grade	Due Date
Multiple-choice exams	85%	Determined by the examination committee
Pre-Assigned projects/quizzes	15%	

Distribution of examination material (may vary depending on material included)

Course Policies:

A- Attendance policies:

Attendance: Mandatory.

First warning – with 4 absences

Last warning – with 5 absences

Failing in the subject – with 6 absences

B- Absences from exams and handing in assignments on time:

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Will result in zero achievements unless a health report or other significant excuse is documented.

C- Health and safety procedures:

Not applicable

D- Honesty policy regarding cheating, plagiarism, misbehavior:

The participation, the commitment of cheating will lead to applying all following penalties together

1. Failing the subject he/she cheated at
2. Failing the other subjects taken in the same course
3. Not allowed to register for the next semester. The summer semester is not considered as a semester

E- Grading policy:

Exams and Quizzes.

Mid Exam:	35 points
Assignments/quizzes:	15 points
Final Exam:	50 points
Total:	100 points

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

Classrooms equipped with computers and data show (for the actual/virtual teaching).

ASU online system to upload lectures to students

ASU exam program to design and implement online exams

Microsoft Teams/ forms to conduct online teaching and quizzes.

Required equipment:

Data show in the class-rooms.

Computers, microphones, internet connection.

Make-up Exam Policy:

Make-up exams will be offered for valid reasons. They may be different from regular exams, both in content and format.

Textbooks information:

Main Reference:

1. Principles of Anatomy and Physiology, 14th Edition, G. Tortora, B. Derrickson. ISBN- 978-1-118-80897-9.

Other References:

2. Guyton and Hall Textbook of Medical Physiology, 13th Edition (Guyton Physiology), John E. Hall. ISBN-13: 978-0323389563
3. Ganong's Review of Medical Physiology, 24th Edition (LANGE Basic Science) 24th Edition by Kim E. Barrett, Susan M. Barman, Scott Boitano, Heddwen Brooks. ISBN-13: 978-0071780032



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Additional information:

No side talks during a lecture
No mobile phones during lecture
Entering the lecture theatre after the instructor is not permitted.
Homework should be done by students independently and will be asked at the exams

Course Material and Announcements

Students need to use the e-learning page at the ASU website/Microsoft Teams in order to get all lecture handouts and guidelines which will be uploaded there.

In addition, course-related announcements and exam results will be posted on the e-learning page and are the responsibility of each student to check the site regularly.

Name of Course Coordinator: **Dr. Muna Barakat** Signature:  Date: 4-10-2020

Head of curriculum committee: **Reem Abutayeh** Signature: 

Head of Department: **Dr. May Abu Taha** Signature: 

Dean:  Signature: _____

Copy to:

Head of Department
Head of the curriculum committee
Course File

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Date:

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