

Course Syllabus

1	Course title	Physiology
2	Course number	0603302
3	Credit hours (theory, practical)	3 hrs
	Contact hours (theory, practical)	3 hrs per class
4	Prerequisites/corequisites	General Biology (2)
5	Program title	BSc. in Nutrition and Dietetics
6	Program code	043
7	Awarding institution	University of Jordan
8	School	Agriculture
9	Department	Nutrition and Food Technology
10	Level of course	2nd or 3rd year
11	Year of study and semester (s)	Fall semester
12	Final Qualification	BSc
13	Other department (s) involved in teaching the course	None
14	Language of Instruction	English
15	Date of production/revision	2019

16. Course Coordinator:

Office numbers, office hours, phone numbers, and email addresses should be listed.
 Dr. Tamara Y. Mousa.
 Office no. 64
 Office phone no. 22413, cell phone no 0795008407
 Email: t.mousa@ju.edu.jo
 Office hours: Sun, Mo, Tue, Wed 11-12

17. Other instructors:

Office numbers, office hours, phone numbers, and email addresses should be listed.

None

18. Course Description:

As stated in the approved study plan.
 This course uses a body-systems approach to examine the physiology of tissues, organs and systems in order to develop an integrated view of the regulated functioning of the human body. The course includes a critical examination of the concept of homeostasis.

19. Course aims and outcomes:

<p>A- Aims: Upon completion of this course, the student will be able to:</p> <ul style="list-style-type: none">• Demonstrate a detailed knowledge of the physiology of the body systems;• Integrate whole-body function with reference to the major regulatory processes;• Explain alternative views of the concept of homeostasis.
<p>B- Intended Learning Outcomes (ILOs): Upon successful completion of this course students will be able to</p>
<p>A. Knowledge and Understanding: Student is expected to</p>
<p>A1- Explain the functional organization & structure of various body systems and its relation to function A2- Describe the main morphologic features of the nervous system A3- Review the physiology of sensory receptors, synaptic transmission, different sensory pathways, sensory coding and sensory lesions. A4- Describe the motor functions of spinal cord, brain stem, motor cortex and subcortical centers. A5- Point out the neural basis of sleep, alertness, instinctual behavior, emotions, learning and memory. A6- Discuss the functional anatomy of the eye, the physiology of the image –forming mechanism, physiology of retina, visual pathway visual cortex and eye movements. A7- Describe the various parts of ear, and summarize the mechanism of hearing, auditory pathway, and various forms of deafness. A8- Point out the physiology of receptor organs and pathways of smell and taste sensations A9- Describe the gross and microscopic anatomy of endocrine glands, mechanism of action of hormones, control of hormone secretion A10- Point out the effect of hormones in health and disease states. A11- Describe the physiology of the male reproductive system and abnormalities of testicular functions. A12- Describe the physiology of female reproductive system as regards ovarian cycle, puberty , pregnancy , parturition , lactation and menopause. A13- Describe the functional anatomy of the digestive system, action and regulation of the gastrointestinal secretion and motility. A14- Describe the metabolism from the physiologic point of view and identify mechanisms of regulation of metabolic rate, body temperature, food intake and physiology of exercise A15- Describe the Respiratory Anatomy & Mechanism A16- Describe the functions (and related anatomy) of the kidney including filtration, reabsorption, and secretion A17- Describe the regulation of fluid and acid-base balance in the body A18- Describe the function (and related anatomy) of the cardiovascular system and the nervous and hormonal control of cardiac function A19- Describe patterns and physics of blood flow and the physiology of blood vessels and blood pressure A20- Describe the blood and body defenses including innate and adaptive immunity A21- Describe structure and function of skeletal, smooth, & cardiac muscles, & motor movement</p>
<p>B. Intellectual Analytical and Cognitive Skills: Student is expected to</p>
<p>B1- Distinguish between physiological and pathological performance of different body systems. B2- Suggest the basic physiological measurements used to test different body functions. B3- Integrate physiology with other sciences.</p>
<p>C. Subject- Specific Skills: Students is expected to</p>
<p>C1- To explore in details the function and structure of each of the mentioned body systems as well their integration to achieve homeostasis through case scenarios, reports and problem solving</p>
<p>D. Transferable Key Skills: Students is expected to</p>
<p>D1- Integrate physiological with other basic and clinical sciences. D2- Work separately or in groups to research and prepare a scientific topic.</p>

20. Topic Outline and Schedule:

Topic	Week	Instructor	Achieved ILOs	Evaluation Methods	Reference
Introduction to Physiology and Homeostasis - Describe the principles of homeostasis - Describe integration of various physiological systems	1	Tamara Mousa	A1 B1-C1-D1	Exams, and homework	Sherwood, L. (2016) <i>Human Physiology</i> (4 th edition). Brooks/Cole, Cengage Learning.
The Digestive System: Describe the: - Absorption of nutrients from the GI tract - Nervous & hormonal regulation of digestion	2	Tamara Mousa	A13 B1-B3 C1-D1-D2	Exams and homework	Sherwood, 2016
Principles of Neural and Hormonal Communication - Describe nerve impulses and action potentials - Describe the mechanism of synaptic transmission - Describe the function of the central nervous system - Describe the mechanism of sensory systems	3	Tamara Mousa	A2-A3-A4-A5 B1-B2 C1-D1	Exams and homework	Sherwood, 2016
The Endocrine System: Describe the: - Hormone actions and	4	Tamara Mousa	A9-A10 B1-B3 C1 D1-D2	Exams and homework	Sherwood, 2016

<p>their receptors</p> <ul style="list-style-type: none"> - Functions of hormones secreted by the glands - Hormonal regulation and reproduction - Hypothalamus and pituitary - Endocrine control of growth - Pineal gland and circadian rhythm - Thyroid gland - Adrenal glands - Integrated stress response - Endocrine pancreas and control of fuel metabolism - Parathyroid gland and control of calcium metabolism 					
<p>The Blood and Body Defenses: Describe:</p> <ul style="list-style-type: none"> - Blood composition and function - Immunity & Antibody-Mediated Immunity 	5	Tamara Mousa	A20 B1-B3 D1-D2	Exams and homework	Sherwood, 2016
<p>The Blood Vessels and Blood Pressure: Describe</p> <ul style="list-style-type: none"> - Arteries, Capillaries, and Veins - Patterns and physics of blood flow & blood pressure 	6	Tamara Mousa	A19 B1-B3 C1, D1	Exams and homework	Sherwood, 2016.

Cardiac Physiology: Describe the: - Function (and anatomy) of the cardiovascular system - Nervous & hormonal control of cardiac function - Factors involved in the regulation of arterial blood pressure	7	Tamara Mousa	A18 B1-B2 C1 D2	Exams and homework	Sherwood, 2016
The Urinary System: Describe the: - Functions (and related anatomy) of the kidney - Filtration, reabsorption, and secretion - Regulation of fluid and acid-base balance in the body	8	Tamara Mousa	A16-A17 B1- B3 D1-D2	Exams and homework	Sherwood, 2016
Energy Balance and Temperature Regulation - Describe energy balance - Describe temperature regulation	9	Tamara Mousa	A14 B1-B3 C1-D1	Exams and homework	Sherwood, 2016
The Respiratory System: Describe: - Respiratory Anatomy & Mechanism - Gas exchange and gas transport	10	Tamara Mousa	A15 B1-B2 C1-D1	Exams and homework	Sherwood, 2016
Muscle Physiology: Describe - Structure and	11	Tamara Mousa	A21 B1-B3 C1-D1	Exams and homework	Sherwood, 2016

function of skeletal, smooth, & cardiac muscles - Motor movement					
The Central Nervous System: Describe: - Organization and cells of CNS - Cerebral cortex structure & function - Emotion, Behavior and Motivation - Learning and Memory	12	Tamara Mousa	A2-A5 B1-B2 C1-D2	Exams and homework	Sherwood, 2016
The Peripheral Nervous System: Describe: Afferent & Efferent Division and Special Senses	13	Tamara Mousa	A2 - A8 B1 -B3 C1-D1-D2	Exams and homework	Sherwood, 2016
The Reproductive System - Describe the male reproductive physiology - Describe the female reproductive physiology	14	Tamara Mousa	A11-A12 B1-B3 C1 D1-D2	Exams and homework	Sherwood, 2016

21. Teaching Methods and Assignments:

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

Lectures, group discussion, assignments, and student critical reading. Teaching tools include the use of the board, transparencies, PowerPoint presentation and handouts.

22. Evaluation Methods and Course Requirements:

Opportunities to demonstrate achievement of the ILOs are provided through the following assessment methods and requirements:

Exams, quizzes, homework, assignments, and class discussions.

23. Course Policies:

A- Attendance policies: after 6 unjustified absences, the student is dismissed from the course.

B- Absences from exams and handing in assignments on time: late assignments are accepted with justified excuse but with losing one point of the total grade of the assignment.

In case of missing an exam, the student can do a make-up exam only if he had a justified excuse.

C- Health and safety procedures: phone, cigarettes and hot drinks are not allowed in the class.

D- Honesty policy regarding cheating, plagiarism, misbehaviour: the student is given a notice about his behaviour, if he did not behave then will have to leave the class and see the head of the department

E- Grading policy: each wrong answer will lose a point

F- Available university services that support achievement in the course: availability of smart boards to display information to the students.

24. Required equipment: (Facilities, Tools, Labs, Training....)

This course does not need any extra facilities than what is already present in the classroom.

25. References:

Required book (s), assigned reading and audio-visuals:

Sherwood, L. (2016) *Human Physiology* (4th edition). Brooks/Cole, Cengage Learning.

Recommended books, materials, and media:

Sherwood, L. (2012) *Essentials of Physiology* (4th edition). Brooks/Cole, Cengage Learning.

Costanzo, L.S. (2009) *Physiology* (4th edition). Philadelphia: Saunders.

Germann, W.J. and Stanfield, C.L. (2010) *Principles of Human Physiology* (4th edition). San Francisco: Benjamin Cummings.

Rhoades, R.A. and Pflanzer, R.G. (2003) *Human Physiology* (4th edition). Brooks/Cole Publishing.

Saladin, K.S. (2012) *Anatomy & Physiology* (6th edition). New York: McGraw-Hill

26. Additional information:

None

Name of Course Coordinator: Dr. Tamara Y. Mousa Signature: ----- Date: 22/10/2019

Head of curriculum committee/Department: ----- Signature: -----

Head of Department: Dr. Maher Al-Dabbas Signature: -----

Head of curriculum committee/Faculty: ----- Signature: -----

Dean: ----- -Signature: -----