



**The University of Jordan**

**Accreditation & Quality Assurance Center**

**COURSE Syllabus**

|    |  |   |
|----|--|---|
| 1  | Course title   | Physiology  |
| 2  | Course number  | 0344363   |
| 3  | Credit hours (theory, practical)                     | 4 Credit Hour   |
|    | Contact hours (theory, practical)                    | 3+3   |
| 4  | Prerequisites/corequisites                           | Biology 0304102   |
| 5  | Program title  | Bachelor of Biological Sciences                               |
| 6  | Program code   | 0304  |
| 7  | Awarding institution                                 | The University of Jordan                                      |
| 8  | Faculty  | Faculty of Science  |
| 9  | Department   | Department of Biological Sciences                             |
| 10 | Level of course                                      | Third Year  |
| 11 | Year of study and semester (s)                       | First semester 2016   |
| 12 | Final Qualification                                  | Biological Sciences (BSc) and Medical Analysis (BSc) Programs |
| 13 | Other department (s) involved in teaching the course | None  |
| 14 | Language of Instruction                              | English   |
| 15 | Date of production/revision                          | First semester 2016   |

**16. Course Coordinator:**

Dr. Hana Hammad  
Office No.: 308  
Office Hour: Sunday and Tuesday 11:00 - 12:00  
Email address: hhammad@ju.edu.jo

**17. Other instructors:**

*Office numbers, office hours, phone numbers, and email addresses should be listed.*  
None.

**18. Course Description:**

Basic mechanisms of human physiology: Homeostasis, signal transduction, nervous system, sensory systems, muscle, endocrine physiology, cardiovascular physiology, respiration, renal physiology and body fluid regulation.

**19. Course aims and outcomes:**

**A- Aims:**

- Explain the principles of homeostasis and negative feedback control, and provide specific examples.
- Understand the physiological functions of the major classes of biomolecules.
- Relate biological structure to function at different levels of biological organization.
- Describe the mechanisms of action of nerve and muscle cells.
- Explain mechanisms of cell signaling in the nervous, sensory, and endocrine systems.
- Outline the functions of the major organ systems of the body and provide examples of coordinated interactions among these systems.

**B- Intended Learning Outcomes (ILOs):** Upon successful completion of this course students will be able to ...

**A. Knowledge and Understanding Skills:** Student is expected to

A1- Describe some biophysical laws and their relation to human physiology.

A2- Describe the cellular functions at the organelle and molecular level.

A3- Discuss regulation of extracellular fluid composition and volume

A4- Point out the basis of excitability ( membrane potentials) in all living cells especially in nerve and muscle cells.

A5- Explain the functions of the nerve cell and muscle fiber grossly and at the molecular level.

A6- Classify the functional organization of sympathetic and parasympathetic nervous systems

A7- Describe the organization and function of the endocrine system and explain its role in regulating homeostasis of the human body

A8- describe the structure, properties and functions of muscles grossly and at the molecular level.

A9- Describe the organization and function of the cardiovascular system

A10 - Point out the functional anatomy of the kidney , physiology of glomerular filtration , renal tubular function and micturition.

A11 - describe the physiology of pulmonary ventilation, exchange of gases in the lung , and blood gas transport.

A12- Describe the organization and function of the dogestive system

**B. Intellectual Analytical and Cognitive Skills:** Student is expected to

B1- Evaluate the normal functions of different components of mentioned systems, and the effect of their disturbances.

**C. Subject- Specific Skills:** Student is expected to

C1- Suggest the basic physiological measurements used to test different system functions.

C2- Interpret the most important physiological laboratory results, and distinguishes between physiological and pathological performance of different body systems.

**D. Creativity /Transferable Key Skills/Evaluation:** Student is expected to

D1- Work effectively within a team

D2- Participate effectively in group discussion or debates and Report practical procedures in a clear and concise manner.





|  |       |  |               |                      |           |
|--|-------|--|---------------|----------------------|-----------|
| <p><b><u>Regulation of Ion and Water Balance</u></b><br/> 14.6 Total-Body Balance of Sodium and Water<br/> 14.7 Basic Renal Processes for Sodium and Water<br/> 14.8 Renal Sodium Regulation<br/> 14.9 Renal Water Regulation<br/> 14.12 Potassium Regulation<br/> 14.13 Renal Regulation of Calcium and Phosphate Ion</p> |       |  |               |                      |           |
| <p><b>The Digestion and Absorption of Food</b><br/> 15.1 Overview of the Digestive System<br/> 15.2 Structure of the Gastrointestinal Tract Wall<br/> 15.3 General Functions of the Gastrointestinal and Accessory Organs<br/> 15.4 Digestion and Absorption<br/> 15.5 How Are Gastrointestinal Processes Regulated?</p>   | 42-45 |  | A12, B1,C1,C2 | Discussion and Exams | <b>15</b> |

**21. Teaching Methods and Assignments:**

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

**22. Evaluation Methods and Course Requirements:**

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

**23. Course Policies:**

A- Attendance policies:

Students are allowed to not attend seven lectures (15%) in the whole semester. In this case, students must attend every lab weekly. If a student does not attend a lab, then he/she has a maximum numbers of four lectures to skip.

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

If a student does not attend an exam, he/she will get zero grade in that exam, unless, he/she shows a medical report that proves he/she could not attend the exam. In this case, a makeup exam will be offered to the student as soon as possible.

C- Health and safety procedures:

Students need to be aware of the basic procedure of laboratory safety. Part of the first lab in the first week of the semester is assigned to teach students these basic laboratory procedures.

D- Honesty policy regarding cheating, plagiarism, misbehavior:

University regulations will be implemented for any cheating attempt, plagiarism and misbehavior.

E- Grading policy:

| <b>Evaluation</b>              | <b>Grade</b> |
|--------------------------------|--------------|
| <b>First Exam</b>              | 20           |
| <b>Second Exam</b>             | 20           |
| <b>Lab Reports and Quizzes</b> | 10           |
| <b>Final Lab Exam</b>          | 10           |
| <b>Final Lecture Exam</b>      | 40           |

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

The university provides lab materials and equipment. Moreover, the university provides personnel to help in exams.

**24. Required equipment:**

1. Data show
2. Lab instruments

**25. References:**

Widmaier, E.P., Raff, H. and Strang, K. T. Vander's Human Physiology  
The Mechanisms of Body Function, 13<sup>th</sup> Ed. New York, McGraw-Hill, 2014.

Laboratory Manual

**26. Additional information:**

Name of Course Coordinator: الدكتور هنا حماد Signature: ----- Date: 12/ 01/ 2016

Head of curriculum committee/Department: الاستاذة الدكتورة سوسن العوران Signature: -----

Head of Department: الدكتورة هنا العبوس Signature: -----

Head of curriculum committee/Faculty: الاستاذة الدكتورة أمل العابودي Signature: -----

Dean: الاستاذ الدكتور صالح محمود Signature: -----

Copy to:

Head of Department  
Assistant Dean for Quality Assurance  
Course File