# Course Syllabus of Physiology

**Faculty: Medicine and Health Sciences**
**Department: Health Sciences**
**Program: Bachelor in Clinical Nutrition and Dietetic**

| **I. General information about the course instructor :** | | | | | | | |
|---|---|---|---|---|---|---|---|
| Name | Dr…Lila Alward | Office Hours(3 Hours Weekly ) | | | | | |
| Location & phone number | Sana,a city 770603164 | Sat | Sun | Mon | Tue | Wed | Thu |
| Email | l.alward1@ust.edu | | 1 | 1 | | | 1 |

| **II. General information about the course:** | | | | | | |
|---|---|---|---|---|---|---|
| 1. | Course Title : | Physiology | | | | |
| 2. | Course Code and Number : | BHS 140 | | | | |
| 3. | Credit Hours : | Credit Hours | | | | Total |
| | | Theoretical | Seminar/Tutorial | Practical | Training | |
| | | 2 | | 1 | | 3 |
| 4. | Study Level and Semester: | 1st level / 2nd semester | | | | |
| 5. | Pre-requisites : | BHS120 | | | | |
| 6. | Co-requisites : | None | | | | |
| 7. | Program in which the course is offered: | Bachelor in Clinical Nutrition and Dietetic | | | | |
| 8. | Teaching Language: | English | | | | |
| 9. | Instruction location: | University of Science and Technology, Sana'a, Yemen | | | | |

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إدارة ضمان الجودة والاعتماد
معتمد
APPROVED

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الموصف :
ا. د. صادق عبد المغني

المراجع :
د. ليلى الورد
د. مجاهد نصار

رئيس القسم
د. عبد الحبيب القباطي

عميد الكلية:
د. عبد الله المخلافي

## III. Course Description

This introductory physiology course introduces basics concepts in physiology of human body. This course familiarizes students with basic definitions and principles related to physiology. This course helps students to understand body cellular physiology including the functions of cell components , transport mechanisms across cell membrane, functions of total body water and functions of components of blood . Also This course gives an overview on the physiology of nervous system, cardiovascular system, respiratory system, digestive and renal systems and the endocrine system. The teaching will include lecture, clinical practice ,self-learning, discussion and assignment. The students will be evaluated through report, written exam and practical exam. Biology is a prerequisite course.

## IV. Course Aims: This course aimed to

1. Provide the students with basic principles related to physiology as a study of the living body at molecular, cellular as well as the level of intact organism.
2. Learn the student principles and mechanisms of membrane transport.
3. Expand students' knowledge with physiological implications related to circulating body fluids.
4. Enable the students to cover the general organization and functional aspects of the autonomic nervous system.
5. Give the student the knowledge about the general organization and functions of cardiovascular, respiratory, endocrine, Digestive and renal systems and their role in maintenance of homeostasis.

## V. Course Intended Learning Outcomes (CILOs) :

1. Recognize the functions of the different organelles in the human cell, and the transport system across the cell membranes.
2. Outline the compartments, composition & functions of the body fluids .
3. Describe the general organization and functions of cardiovascular, endocrine, respiratory, renal systems and nervous system and explain their role in maintenance of homeostasis.
4. Distinguish between normal and abnormal laboratory tests.
5. Integrate physiology with other basic and clinical science.
6. Perform hematological tests : estimation of blood hemoglobin, hematocrit , ESR ,blood groups and hemostasis tests.
7. Detect disturbances in body functions in abnormal laboratory tests.
8. Communicate effectively with students by discussing results obtained from experimental physiological lab.
9. Present physiological data in a graphical form.

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الموصف :
ا.د. صادق عبد المغني

## VI. Course Content

**First: Theoretical Aspects**

| No. | Course Topics/Units | Sub-topics | No. of Weeks | Contact Hours |
|---|---|---|---|---|
| 1 | 1-Physiology of the cell.<br>2-Transport across the cell membrane. | **Cell compositions**<br>Cell membrane<br>Cytoplasmic organelles<br>Nucleus<br>Movements of molecules across membranes<br>Mechanism of particles and water diffusion across cell membrane | 1st ,2nd | 4 |
| 2 | 1-Body fluids<br>2-Osmosis, tonicity and water balance | Body fluid importance<br>Body fluid compartments<br>Intracellular fluid (ICF)<br>Extracellular fluid (ECF) | 3rd ,4th | 4 |
| 3 | 1-Composition and functions of the blood.<br>2- RBCs, Formation and general functions. | Composition of blood:<br>Plasma<br>Blood elements<br>Red blood corpuscles<br>RBCs functions | 5th ,6th | 4 |
| 4 | 3- WBCs: structures, classifications and functions<br>4- Hemostasis and its disorders | White blood cells<br>Types of leucocytes<br>White blood cells functions<br>Platelets<br>Hemostasis and WBCs disorders | 7th | 2 |
| 5 | Mid-term | | 8th | 2 |
| 6 | Introduction to cardiovascular system<br>Heart and blood vessels<br>Blood pressure | - Physiological anatomy, pulmonary and systemic circulation<br>- Blood pressure and factor Determining and maintaining it. | 9th ,10th | 4 |





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|---|---|---|---|---|
| 7 | Introduction to respiratory system. | - Mechanism of respiration.<br>- Regulation of respiration | 11th,12th | 4 |
| 8 | The kidney and its units | Functional of the kidneys.<br>Mechanisms of urine formation.<br>Regulation of acid-bace balance | 13th | 2 |
| 9 | Introduction to gastrointestinal system. | Function<br>Mechanism of primary and accessory parts | 14th | 2 |
| 10 | Endocrine system | Introduction to endocrine system: endocrine glands and their functions. | 15th | 2 |
| 11 | Final exam | | 16th | 2 |
| **Total number of weeks and hours** | | | **16** | **32** |

| **Second: Practical/Tutorial/Clinical Aspects** | | | |
|---|---|---|---|
| **No.** | **Practical/Tutorial/Clinical topics** | **No. of Weeks** | **Contact Hours** |
| 1 | Blood separation | 2nd | 2 |
| 2 | Hemoglobin Estimation | 3rd | 2 |
| 3 | Hematocrit Estimation | 4th | 2 |
| 4 | ESR Estimation | 5th | 2 |
| 5 | Blood grouping | 6th | 2 |
| 6 | Hemostasis tests Estimation | 7th | 2 |
| 7 | Vital signs measurement | 8th.9th,10th | 6 |
| 8 | Practical exam | 11th | 2 |
| **Total number of weeks and hours** | | 10 | 20 |

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