University of Baghdad
College of Nursing
BSN. Program

Course Syllabus

Human Physiology for Nurses

2022/2023
2nd Semester

This syllabus is subject to change. Changes will be announced to students.
It is the responsibility of the student to comply with any changes.

Created: February 9, 2019 by **©Dr. Asmehan Adnan AL-Naqeeb, Dr. Suzan Ibrahim Ali**

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General Information & Policies

Course Number and Title: Human Physiology for nurses\ First years /Second Semester
علم الفسلجة البشري للمرضين

Number of Credit Hours: Total of (4) credits:
Theory (3) credits.
Practical (1) credits.

Times & Places: (Theoretical part) on Monday @8:30 AM-1:30 PM , Bachelor's Hall,
The practical Physiology Monday and Tuesday 8:30- 2:30 (groups) in the (physiology Lab) .

Prerequisites:
Covering all aspects of human physiology; Anatomy is required, necessary and must be given in the first course (semester).

Course Description:
Human Physiology is a single-semester, 4-credit-hour course designed to provide students with an understanding of the function, regulation and integration of human body organ systems. Emphasis is placed on homeostatic maintenance in health as well as in some disease processes.

Teaching Methods: Lectures, discussions, & assignments. Google Classroom shall be used for online discussion.

Evaluation Methods: Unit exam(s), Quarterly exams, quizzes, class discussions and reports, & written assignments.

Faculty, Contact Information, & Office Hours:
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Office hours ►See my weekly schedule!

Required Textbook(s) and Other Materials:

- Ganongs Review of Medical Physiology (McGraw Hill, 23nd edition, 2010, by Kim E. Barrett, Susan M. Barman, Heddwen L. Brooks, Scott Boitano).
- Guyton and Hall Textbook of Medical Physiology .13 edition,2016. by John E. Hall.
- Overview of Anatomy and Physiology, 2014, by Assad Ismail Ahmad.

Academic Dishonesty: Academic honesty is required in all aspects of a student's relationship with the university. **Students are advised that cheating** . If that happens, the student shall earn zero and be under the legal circumstances.

Course Objectives

By the completion of this course the student will be able to:

1. Basic concept and knowledge of structure and functioning of different systems in body.
2. To understand integrated aspect of functioning of the individual and all the systems in totality in body.
3. To understand the integration of the combined knowledge of Physiology, Anatomy and Biochemistry.
4. 4. To know all the common clinical conditions of deranged normal physiology in body - clinical usefulness for knowing Physiology.
5. To be able to solve simple clinical problems with the help of their knowledge in Physiology.
6. promote and inculcate curiosity and skill for elective learning in the field of research.

Course Requirements

To complete the course successfully, the student must:

1. Adhere to the policies stated in this syllabus and printed in the *College of Nursing Student Handbook.*

2. Complete and submit each assignment by the due date and time.

3. Earn a grade of **50% or higher**. The aforementioned grade in NURS courses **is the minimum passing grade at the undergraduate level**.

4.Attend classes! Based on *The Student Guideline*, the student shall be marked "failure" if (s)he absents 15% of the total hours.

Evaluation & Grading

Distribution of Points:

Requirements	Possible Points
Two mid term exam	15% for each assignment=30%
The practical exam	10%
The total of 40% before the final exam.	
The Final exam	60%
Total	**100%**

Course Schedule and activities

Week	Date of Class	Unit to be Covered and/or Other Activity	
W1	**-3-2023**	**Introduction to Human Physiology**: 1.1. Introduction of Physiology **1.2. Physiology of Body fluids(water) and electrolyte** 1.2.1. Definitions, Composition of body fluids 1.2.2. Types of body fluids, 1.2.3. Electrolytes of the body fluids 1.2.4. Movement of, body fluids 1) Hydrostatic pressure 2) osmotic pressure. 1.2.5 Regulation of Water Output 1.2.6 Disorders of water imbalance.	
W2	**-3-2023**	**Physiology of Digestive System**: 2.1. Composition and Functions of Salivary Secretion 2.2. Swallowing 2.3. Gastric Secretion. 2.4. Digestion and Regulate the Secretion. 2.5. Digestion and Absorption in Small Intestine Secretion, Digestion and Absorption in Large Intestinal, 2.6. 2.7. Function of Liver, Pancreas and Gallbladder 2.8. Movement of Digestive Material 2.9. Control of Digestive Functions	
W3	**-3-2023**	**Physiology of Muscular System:** 3.1. Study the general function of the Muscles. 3.2. Types and functions of different parts of these organs. 3.3. Contraction of skeletal muscles. 3.4. Sliding theory and its steps. 3.5. Action potential and ions fluxes. 3.6. muscular performance. 3.7. Muscle tone. 3.8. Source of energy stored in muscles. 3.9. Hormones and muscle.	
W4	**-4-2023**	**Physiology of Respiratory system** 4.1. Types of respiration 4.2. Pulmonary ventilation or respiratory cycle 4.3 Factors Control Gases Pressure 4.4. Respiratory Muscles 4.5. Volume of pulmonary air space 4.6. Calculation of pulmonary ventilation in health and disease	

		4.7. Gases transport 4.8. Factors Affecting the Affinity of Hemoglobin to Oxygen 4.9. control of respiration	
W5	**-4-2022**	**Physiology of The Cardiovascular System Part1:** 5.1. Study the functional properties of the heart. 5.2. Action potential of the cardiac muscle. 5.3. Conductivity and conducting system. 5.4. Rhythmicity. 5.5. Cardiac pacemaker. 5.6. Heart rate, factor effecting heart rate. 5.7. Cardiac cycle. 5.8. Heart sound. 5.9. Electrocardiogram.	
W6	**-4-2023**	**Physiology of The Cardiovascular System Part II:** 6.1. Study the General function of the Blood Vessels 6.2. Heamodynamic 6.3. Factor effecting of blood flow 6.4. Types of blood flow 6.5. Types of blood pressure 6.6. Regulation of blood pressure 6.6.1. Neuronal 6.6.2. Hormonal	
W 7	**-4-2023**	**Physiology of Nervous System:** 7.1. Membrane potential. 7.2. Types of membrane channels. 7.3. Action potential. 7.4. Synapses and Conduction of Nerve Impulses –action potentials. 7.4.1. Types of synapses. 7.4.2. Synapses activity. 7.5. Reflexes. 7.5.1. Component of Neural Reflexes. 7.5.2. Type of Reflexes. 7.5.3. Example of Reflexes. 7.6. Autonomic nervous system 7.7. Support and the protection of the brain	
W8	**-5-2023**	**Physiology of The Urinary System**: 8.1. Study the general function of the urinary system 8.2. The blood and nerve supply of the kidney 8.3. The function of the kidney 8.4. Urine formation 8.4.1. Glomerular filtration 8.4.2. Tubular reabsorption and secretion.	

		8.5. The hormones that influence selective reabsorption. 8.6. Control of blood pressure. 8.7. Micturition	
W9	**-5-2023**	**Blood physiology:** 9.1. Overview of Blood 9.2. Gaseous Exchange 9.3. Blood composition 9.3.1. Plasma 9.3.2. Red Blood Cells 9.3.3. White Blood Cells 9.3.4. Platelets 9.4. Hemostasis (Coagulation or Clotting) 9.5. ABO Group System 9.6. Surface Antigens, Inheritance, Compatibility in Blood/Plasma Transfusions 9.7. Hemolytic Disease of the Newborn	
W10	**-5-2023**	**Physiology of The lymphatic and immune system** 10.1. Lymph flow 10.1.1, Lymph flow in the lymphatic vessels 10.1.2. Lymph flow in the lymph nodes, 10.2. Function of lymph nodes 10.3. Function of spleen and thymus 10.4. The Defense Mechanisms and Immunity 10.4.1. Non Specific Defense Mechanisms (Innate Immunity =Native Immunity 10.4.1.1. First line 10.4.1.2. Second line 10.5. Specific Defense Mechanisms (Acquired immunity = Adaptive immunity) 10.6. Humeral Immunity (Antibody Mediated Immunity)	
W11	**-5-2023**	**Physiology of The Endocrine System:** 11,1. Types of Glands 11.2. Function of endocrine system 11.3. Hormones: 11.3.1 Characteristics of Hormones 11.3.2. Functions of hormones 11.3.3. Classification of hormones 11.4. Mechanism of Hormone Action 11.4.1. Internal receptors 11.4. 2. External receptors 11.5. Endocrine Glands & functions (Hypothalamus, Pituitary Gland, Thyroid Gland, pancreas, Adrenal Glands, Parathyroid Glands, Pineal glands, Gonads Male gonads are known as the testes, and ovaries in	

		case of females. Testes, The placenta.	
W12	-6-2023	**Physiology of female reproductive System** 12.1. The functions of the female reproductive system 12.2. Oogenesis 12.3, Hormonal control of ♀ secondary sex characteristic 12,4, Ovarian cycle 12,5, Uterine Cycle (Menstrual Cycle) and Menstruation 12,6, Fertilization 12,7, Pregnancy 12,8, labor process 12,9, lactation	
W13	-6-2023	**Physiology of Male Reproductive System** 13.1. Function 13.1.1, Spermatogenesis Formation of sperm 13.1.2. Hormonal factors that stimulate spermatogenesis 13,2, Maturation of sperm in the epididymis 13.3. Storage of sperms 13,4, Secretion and function of Male glands 13,4, 1. Function of the seminal vesicles 13,4, 2, Function of the prostate gland 13,5, Semen – the fluid & sperm from the vas deferens 13,6, Capacitation of the spermatozoa 13,7, Testosterone and other male sex hormones	
W14	-6-2023	**Sens physiology** 14.1. Cutaneous sensation 14.2. physiology of vision 14.3. physiology of hearing 14.4. Taste bud physiology 14.5. Smell physiology	

Practical Syllabus of Physiology

Basic Science
Second course

Date of Class	Assigned readings to be completed	Descriptions
Week 1	1-Body fluids	Body fluid compartment, fluid transportation,1- osmosis 2- diffusion 3- active transport 4- filtration Types of Solutions, Fluid volume loss (hypovolemia), nursing innervation
Week 2	2-The electrocardiography (ECG)	Definition, medical uses, Electrodes and leads, Electrode placement, Amplitudes and intervals.
Week3	3-Muscular System	Function of muscular system, types of muscles, sliding, theory, muscle tone, Electromyography (EMG), the causes of uses,
Week4	4-Respiratory System	Lung Volumes and capacities, What are the 4 lung volumes? What are normal lung volumes? What does low lung volumes mean? How do you measure lung volume? spirometer
Week 5	5-Hemoglobin concentration and P.C.V	Hemoglobin (Hb) definition, principle, Determination of Hematocrit (Hct) or Packed Cell Volume (PCV**)**, source of error.
Week 6	6-Morphological classification of anemia	Definition of Anemia, Anemia Classification On the Basis of Physiological Abnormality, Anemia Classification On The Basis Of Etiology**,** Indications For The Tests Of Anemias, Types Of Anemias
Week 7	7- Blood smear	Clinical Definition Of Peripheral Blood Smear When Do You Expect Results? Why Get Tested? Reason To Take Peripheral Blood Smear Test Preparations Needed For Peripheral Blood Smear Test Sample Required?
Week8	8-Differential count of WBCs	Definition , causes of test, techniques, clinical significances
Week 9	9-White and RBCs cell count	Principle, diluting fluids, Calculations
Week 10	10-Pletlets count	Principle, causes of test ,calculations
Week 11	11-blood group test	Principles, antigen, antibody, agglutination, The blood types, Why blood typing is done, How to prepare for blood typing

Week 12	12-Clotting and bleeding time	Clotting time and bleeding time definition, Principle, Capillary tube method, Dukeś methods
Week13	13-Urine analysis	Urine analysis definition, urine sample collection ,types of urine analysis

Rubric for the practicum

	Grading Criteria	**Possible Points**
1	Wearing lab coat & gloves	1
2	Prepare equipment of the experiment (test)	1
3	Knowledge about the steps of the test procedure	2
4	How to use the equipment	2
5	Reading the test results	2
6	Discussion the results	2
	Total	**10**