COURSE DESCRIPTIONS

Faculty	Pharmacy				
Department	Medical Laboratory Sciences			**NQF level**	7
Course Title	Endocrinology	**Code**	902423	**Prerequisite**	902422
Credit Hours	2	**Theory**		**Practical**	
Course Leader	Sokiyna ababneh	**email**	s.ababneh@jadara.edu.jo		
Lecturers	Sokiyna ababneh	**emails**	s.ababneh@jadara.edu.jo		
Lecture time		**Classroom**		**Attendance**	
Semester	Summer Semester 2021/2022	**Production**	2020	**Updated**	2022

Short Description

This course is an introduction to general fundamentals and principles of hormones and endocrine glands in relation to their clinical significance for medical laboratory sciences students. It is a building block and a complementary course to the clinical biochemistry 1 and 2 in the third-year level. Topics include hormone definitions, mechanisms of action, hormonal function, endocrine glands. Topics also cover the regulation of the main analytes of clinical significance, such as sodium, potassium, calcium, magnesium, glucose, and others.

Course Objectives

Upon completion this course, student should be able to:

- Gain the basic knowledge and understand the definition of the endocrine system and hormones, structure of hormones, the function of various hormones, their mechanism of actions, and their clinical significance.
- Provide basic information about the quality control, quality assurance, and methods of evaluation of hormones.
- Describe and discuss different methods of hormone sampling and units of measurements.
- Discuss safety in the clinical bio-analytical chemistry laboratories-hormones.

Course Intended Learning Outcomes (CILOs)

A. Knowledge - Theoretical Understanding

a1. **Define** endocrine system and hormones.
a2. **Explain** structure of hormones, the function of various hormones, their mechanism of actions, and their clinical significance.

B. Knowledge - Practical Application

a3. **Apply** quality control, quality assurance, and methods of evaluation of hormones.

C. Skills - Generic Problem Solving and Analytical Skills

b1. **Take part in** different methods of hormone sampling and use different units of measurements.

D. Skills - Communication, ICT, and Numeracy

E. Competence: Autonomy, Responsibility, and Context

c1. **Apply** safety measures in the clinical bio-analytical chemistry laboratories.

Teaching and Learning Methods

- Lectures will be given according to the specified time and location as assigned on the academic schedule.
- Lectures will be administrated using power-point presentations and will be provided to the students through JU e-learning website.
- Brainstorming, problem solving & case studies.
- Textbook is obligatory and required by the students.

Teaching duration:

According to the academic calendar provided at JU website.

Assessment Methods

- Midterm Exam
- Quizzes
- Discussion & Interaction
- Final Exam

Course Contents

Week	Hours	CILOs	Topics	Teaching & Learning Methods	Assessment Methods
1.	2	a1, a2	Introduction - Definition of hormone - Neural- endocrine control	Handout	Quiz, Midterm, Discussion & Interaction
2.	2	a1, a2, c1	Introduction - Definition of hormone - Neural- endocrine control - Type of hormones & Mechanism of action	Handout	Quiz, Midterm, Discussion & Interaction
3.	2	a1, a2, c1	Mechanism of action Endocrine glands and hormones Hormones	Handout	Quiz, Midterm, Discussion & Interaction
4.	2	a1, a2, c1	Pineal Gland & Melatonin & Serotonin	Handout	Quiz, Midterm, Discussion & Interaction

5.	2	a1, a2, a3 b1, c1	Hypothalamus Pituitary Function	Handout	Quiz, Midterm, Discussion & Interaction
6.	2	a1, a2, a3, b1, c1	Growth hormone & prolactin	Handout	Quiz, Midterm, Discussion & Interaction
7.	**2**	**a1, a2, a3, b1, c1**	**Midterm Exam**	**Handout**	
8.	2	a1, a2	Hypothalamus – Pituitary – Adrenal Gland	Handout	Quiz, Final, Discussion & Interaction
9.	2	a1, a2, b1	Renin-Angiotensin-Aldosterone-Axis	Handout	Quiz, Final, Discussion & Interaction
10.	2	a1, a2, b1	Catecholamine's: epinephrine, norepinephrine, dopamine	Handout	Quiz, Final, Discussion & Interaction
11.	2	a1, a2, b1, c1	Parathyroid Gland & Ca, Mg, P Regulation	Handout	Quiz, Final, Discussion & Interaction
12.	2	a1, a2, b1	Hypothalamus-Pituitary-Thyroid Axis	Handout	Quiz, Final, Discussion & Interaction
13.	2	a3, b1, c1	Hypothalamus-Pituitary-Gond Axis	Handout	Quiz, Final, Discussion & Interaction
14.	2	a3, b1, c1	Regulation of Blood Glucose	Handout	Quiz, Final, Discussion & Interaction
15.	2	a3, b1, c1	Hormone Testing & Methods of Measurement Hormones as tumor markers	Handout	Quiz, Final, Discussion & Interaction
16.	**2**	**a1, a2, a3, b1, c1**	**Final Exam**	**Handout**	

Infrastructure	
Textbook	Test Books: Guyton and Hall Textbook of Medical Physiology, 12th edition

	Tietz textbook of clinical chemistry and molecular diagnostics, 5th edition
References	Other references: Handouts
Required reading	• Lecture handouts • NCBI Database (https//: www.ncbi.nlm.nih.gov/): includes many textbooks that are available online FREE. • Internet: there are many websites that provide valuable data related to Clinical Biochemistry including research paper, books, animation, etc. you can find more of these websites by searching in the internet using a suitable searching key. Many websites will be posted on E-learning during the semester.
Electronic materials	Textbook is obligatory and required by the students.
Other	Provided to the students through JU e-learning website.

Course Assessment Plan							
Assessment Method		**Grade**	**CILOs**				
			a1	**a2**	**a3**	**b1**	**c1**
First (Midterm)		30	12	7	3	5	3
Second (if applicable)							
Final Exam		50	6	13	12	16	3
Coursework							
Coursework assessment methods	Assignments						
	Case study						
	Discussion and interaction	10	1	3	1	3	2
	Group work activities						
	Lab tests and assignments						
	Presentations						
	Quizzes	10	3	3	1	2	1
Total		100	22	26	17	26	9

Plagiarism
Plagiarism is claiming that someone else's work is your own. The department has a strict policy regarding plagiarism and, if plagiarism is indeed discovered, this policy will be applied. Note that punishments apply also to anyone assisting another to commit plagiarism (for example by knowingly allowing someone to copy your code). Plagiarism is different from group work in which several individuals share ideas on how to carry out the coursework. You are strongly encouraged to work in small groups, and you will certainly not be penalized for doing so. This means that you may work together on the program. What is important is that you have a full understanding of all aspects of the completed program. To allow proper assessment that this is indeed the case, you must adhere strictly to the course work requirements as outlined above and detailed in the coursework problem description. These requirements are in place to encourage individual understanding, facilitate individual assessment, and deter plagiarism.