



Jordan University of Science and Technology
Faculty of Applied Medical Sciences
Department of Medical Laboratory Sciences

Course Information	
Course Title	Hormones and endocrine glands (2 credit hours)
Course Code	LM212
Prerequisites	Biology 103
Course Website	www.Iww.com
Instructor	Dr. Saleem Banihani
Office Location	Vice Dean office/ Faculty of Applied Medical Sciences
Office Phone #	23946
Office Hours	TBA
E-mail	sabanihani@just.edu.jo
Course Description	
<p>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 biochemistry1 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.</p>	

Textbook	
Title	Tietz textbook of clinical chemistry and molecular diagnostics
Author(s)	Burtis et al.
Publisher	Lippincott's Williams and Wilkins. Elsevier
Year	2012
Edition	5 th edition
Other references	Handouts

Assessment		
Assessment	Expected Due Date	Percentage
First Exam	~5 th week of the semester	30%
Second Exam	~8 th week of the semester	30%
Final Exam	Period of final-As assigned	40%

Course Objectives	Percentage
1. 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.	70%
2. Provide basic information about the quality control, quality assurance, and methods of evaluation of hormones.	20%
3. Describe and discuss different methods of hormone sampling and units of measurements.	5%
4. Discuss safety in the clinical bio-analytical chemistry laboratories-hormones.	5%

Teaching & Learning Methods
<ul style="list-style-type: none"> • Lecture with discussion • Brainstorming • Case studies • Problems solving <p>Teaching duration: Second Year/Second semester.</p>

Objective	Reference(s) Handouts
1, 2,3,4	Handouts

Useful Resources
University library, Internet, experts (assigned by the instructor)

Course Content (lectures)		
Week	Topics	Chapter in Textbook/ Handouts
1	-Introduction -Definition of hormone -Neural- endocrine control	Handouts
2	-Hormone sample collection -Source of errors in collecting hormonal samples -Hormone units and reference ranges	Handouts
3	-Type of hormones -Mechanism of action	Handouts
4	-Endocrine glands and hormonal function -Pinal function-Melatonin	Handouts
5	-Hypothalamus - Pituitary function (anterior and posterior)	Handouts
6	-Hypothalamus-pituitary adrenal axis -Regulation of sodium, potassium, hydrogen ion, and water	Handouts
7	-Regulation of calcium and magnesium	Handouts
8	-Hypothalamus–pituitary–thyroid axis	Handouts
9	-Hypothalamus- pituitary- gonadal axis	Handouts
10	-Growth hormone, Prolactin	Handouts
11	-Regulation of glucose	Handouts
12	-Catecholamine's: epinephrine, norepinephrine, dopamine, Melatonin, and serotonin.	Handouts
13	-Detection of hormones -ELISA	Handouts
14	-Detection of hormones-HPLC	Handouts
15	-Hormones as a tumor markers	Handouts
16	-Special topics in hormones and endocrine glands	Handouts

Additional Notes
<p>Attendance policy: Excuses for absence must be first discussed with the instructor, and approved by the deanship.</p> <p>Expected workload: The student is expected to attend all the classes and the laboratories, write the assigned reports, solve the assignment, and attend and pass the exams.</p> <p>Feedback: Any feedback from the students regarding the progression in the course can be discussed with the instructor (<i>Dr. Saleem Bani Hani</i>) in the assigned office hours: (As assigned by the instructor)</p>

Course Content (lectures)		
Week	Topics	Instructor
1	-Introduction -Definition of hormone -Neural- endocrine control	Dr.Saleem Banihani
2	-Hormone sample collection -Source of errors in collecting hormonal samples -Hormone units and reference ranges	Dr.Saleem Banihani
3	-Type of hormones -Mechanism of action	Dr.Saleem Banihani
4	-Endocrine glands and hormonal function -Pinal function-Melatonin	Dr.Saleem Banihani
5	-Hypothalamus - Pituitary function (anterior and posterior)	Dr.Saleem Banihani
6	-Hypothalamus-pituitary adrenal axis -Regulation of sodium, potassium, hydrogen ion, and water	Dr.Saleem Banihani
7	-Regulation of calcium and magnesium	Dr.Saleem Banihani
8	-Hypothalamus–pituitary–thyroid axis	Dr.Saleem Banihani
9	-Hypothalamus- pituitary- gonadal axis	Dr.Saleem Banihani
10	-Growth hormone, Prolactin	Dr.Saleem Banihani
11	-Regulation of glucose	Dr.Saleem Banihani
12	-Catecholamine's: epinephrine, norepinephrine, dopamine, Melatonin, and serotonin.	Dr.Saleem Banihani
13	-Detection of hormones -ELISA	Dr.Saleem Banihani
14	-Detection of hormones-HPLC	Dr.Saleem Banihani
15	-Hormones as a tumor markers	Dr.Saleem Banihani
16	-Special topics in hormones and endocrine glands	Dr.Saleem Banihani