



Jordan University of Science and Technology
Faculty of Agriculture
Animal Production Department

AP723 Endocrinology - JNQF Level: 9

Second Semester 2023-2024

Course Catalog

3 Credit Hours. Endocrinology is a graduate course of two weekly mandatory lecture credits usually given one term (spring semester) a year. This course provides students with a broad understanding of humans/mammalian endocrinology and a comprehensive overview of their endocrine systems as they relate to the roles of glands, hormones, receptors, and molecular signaling pathways in the control of physiological processes including growth, development, metabolism, blood pressure and reproduction, as well as many other necessary functions. The course also develops an advanced understanding of concepts relating to hormone synthesis secretion and transport; hormone-receptor interactions; mechanisms of signal transduction; and the second messenger systems and hormone initiated cellular and molecular responses and the physiology and pathophysiology of hormones and hormone producing tissues.

Teaching Method: On Campus

Text Book

Title	Williams textbook of endocrinology
Author(s)	Melmed, S., Polonsky, K. S., Larsen, P. R., & Kronenberg, H.
Edition	13th Edition
Short Name	Williams textbook of endocrinology
Other Information	

Course References

Short name	Book name	Author(s)	Edition	Other Information
Manual of endocrinology and metabolism	Manual of endocrinology and metabolism	Norman Lavin (Ed)	4th Edition	
Endocrinology	Endocrinology	Mac E. Hadley, Jon E. Levine	6th Edition	

Instructor

Name	Prof. Mustafa Beni-Domi
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Office Location	M1L3
Office Hours	Sun : 09:30 - 10:30 Mon : 08:30 - 09:30 Tue : 12:00 - 14:30 Thu : 10:00 - 11:30
Email	huseinmq@just.edu.jo

Class Schedule & Room
Section 1: Lecture Time: Mon, Wed : 11:30 - 13:00 Room: LAB

Tentative List of Topics Covered		
Weeks	Topic	References
Week 1	Course introduction and terminology	Chapter1 + Handouts From Williams textbook of endocrinology
Weeks 1, 2	Endocrine tissues, hormones and actions	Chapter 2 + 4 + Handouts From Williams textbook of endocrinology
Week 3	Endocrine hypothalamus	Chapter 6 + Handouts From Williams textbook of endocrinology
Weeks 4, 5	Endocrine methodologies	Chapter 3 + Handouts From Williams textbook of endocrinology , From Endocrinology
Weeks 6, 7	Pituitary hormones	Chapter 5 + Handouts From Williams textbook of endocrinology
Weeks 7, 8	Neurohypophyseal hormones	Chapter 7 + Handouts From Williams textbook of endocrinology
Weeks 10, 11	Growth hormones	Chapter 12 + Handouts From Williams textbook of endocrinology
Weeks 11, 12	Thyroid hormones	Chapter 13 + Handouts From Williams textbook of endocrinology
Week 12	Adrenal hormones: - Glucocorticoids - Minralocorticoids - Catecholamines	Chapter 14 + 15 + Handouts From Williams textbook of endocrinology
Week 13	Pancreatic hormones	Chapter 11 + Handouts From Williams textbook of endocrinology
Week 14	Gastrointestinal hormones	Chapter 10 + Handouts From Williams textbook of endocrinology
Week 15	Calcium homeostasis	Chapter 9 + Handouts From Williams textbook of endocrinology

Week 16	Male and female reproductive endocrinology	Chapter 17 + 18 + Handouts From Williams textbook of endocrinology
Week 16	Pineal gland	Chapter 20 + Handouts From Williams textbook of endocrinology

Mapping of Course Outcomes to Program Outcomes and NQF Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Be able to identify and describe the major anatomical components of the mammalian endocrine systems and explain the functional roles of their respective hormones. [1SLO 1, 1SLO 4] [1L9S2, 1L9C1, 1L9C2, 1L9C6]	10%	First Exam
List and describe chemical classes of hormones with focus on classic endocrine glands and the principles of hormone action and cell signaling, modes of hormone delivery. [1SLO 1, 1SLO 2] [1L9S2, 1L9C1, 1L9C6]	10%	First Exam
Understand molecular mechanisms and signal transduction pathways of hormone action and mechanisms regulating hormone synthesis and secretion. [1SLO 1, 1SLO 4] [1L9S2, 1L9C1]	10%	First Exam, Second Exam
Understand techniques and hormone assays used for studying endocrine mechanisms and methods used to detect and quantify hormone levels. [1SLO 1, 1SLO 2, 1SLO 3, 1SLO 4] [1L9K1, 1L9K2, 1L9S1, 1L9S3]	10%	Second Exam
Be able to describe several aspects of intracellular signaling, the role of hormone/receptor interactions and compare mechanisms of hormone action and the second messengers in molecular responses of target tissues. [1SLO 1, 1SLO 3] [1L9K3, 1L9S1, 1L9C1, 1L9S3]	10%	Second Exam
Understand hypothalamic-pituitary-adrenal, -thyroid, and -gonadal axis and describe pathology of the adrenal cortex and thyroid gland. [1SLO 1, 1SLO 4] [1L9K1, 1L9S1, 1L9C2, 1L9C6]	10%	Final Exam
Be able to describe the biosynthesis and bioactivity of pituitary hormones and their physiological roles. [1SLO 1, 1SLO 4] [1L9K1, 1L9K2, 1L9S2, 1L9C6]	10%	Final Exam
Understand the biology and physiological of pancreatic hormone and role of somatotropin axis and glucose control. [1SLO 1, 1SLO 2, 1SLO 4] [1L9K1, 1L9K2, 1L9S1, 1L9C1]	10%	Final Exam
Understand endocrine control of extracellular Ca ²⁺ homeostasis and endocrine control of reproduction and melatonin. [1SLO 1, 1SLO 2, 1SLO 3, 1SLO 4] [1L9K1, 1L9K2, 1L9S1, 1L9S3]	10%	Final Exam
Develop critical thinking and writing skills through a term paper and a case study or research report in veterinary endocrinology, and be able to critique and analyze scientific journal articles relevant and recent to endocrinology by searching, reading and discussing articles. [1SLO 1, 1SLO 2, 1SLO 3, 1SLO 4] [1L9K1, 1L9K2, 1L9S1, 1L9C1, 1L9C2, 1L9C3, 1L9C5, 1L9S3, 1L9C6]	10%	Final Exam

Relationship to Program Student Outcomes (Out of 100%)								
SLO 1	SLO 2	SLO 3	SLO 4	M.PLO1	M.PLO2	M.PLO3	M.PLO4	M.PLO5
40.83	15.83	12.5	30.83					

Relationship to NQF Outcomes (Out of 100%)										
L9K1	L9K2	L9K3	L9S1	L9S2	L9C1	L9C2	L9C3	L9C5	L9S3	L9C6
13.61	11.11	2.5	13.61	13.33	16.94	6.11	1.11	1.11	8.61	11.94

Evaluation	
Assessment Tool	Weight
First Exam	25%
Second Exam	25%
Final Exam	50%

Policy	
Exams	All exams are closed book and notes. Exams will have different format including multiple-choice, matching, true/false, short answer or essay, drawing and/or labeling figures and calculating where it applies etc. The final exam is comprehensive (covers all the material). Incomplete exams need approval from the department chair.
Cheating	Cheating is a violation and is considered a serious offense and will be treated in accordance with the university policies therefore, it is prohibited.
Attendance	Attendance in class and labs is mandatory! Lecture and Lab attendance will strongly affect your grade! The use of cell phones and other electronic devices is STRICTLY prohibited during all class periods, lab sessions and examinations. Students who are being disruptive in lectures by talking or playing computer games will be asked to leave the classroom. Re-admittance to class is at the discretion of the instructor. In case a student insists guilty of academic misconduct will be subjected to disciplinary action through the regular procedures. Students who miss 20% or more of the course lectures and labs will not be excused under any circumstance and will be subjected to penalties consistent with the university policies.
Participation	Participation is highly encouraged. Participation means reading the assigned material before coming to class, raising issues or asking questions and in general helping to make the class as a positive learning experience.
Withdraw	According to the timeline defined by the university regulations

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