هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

T-104
2022

Course Specification

Course Title:	**Endocrinology**
Course Code:	**ZOOL451**
Program:	**Biology**
Department:	**Biology**
College:	**Science**
Institution:	**Jazan University**
Version:	**4**
Last Revision Date:	**2nd Semester 2022**

Table of Contents:

A. General information about the course:

Course Identification					
1. Credit hours:	2				
2. Course type					
a.	University ☐	College ☐	Department☒	Track☐	Others☐
b.	Required ☒	Elective☐			
3. Level/year at which this course is offered: Level 11 / Year 4th					
4. Course general Description The endocrinology course deals with the study of the endocrine glands (structure, function, regulation, abnormalities, etc.) This course study some of the special topics in endocrinology like mechanism of action of hormones, how hormones control homeostasis and the pathological conditions associated with endocrine imbalance,					
5. Pre-requirements for this course (if any): Animal Physiology ZOOL351					
6. Co- requirements for this course (if any): None					
7. Course Main Objective(s) This course is designed to provide students with the following concepts: 1-To understand the role of the endocrine system in maintaining homeostasis and health. 2-To identify the different types of glands and hormones. 3-To study the mechanism of action of different hormones. 4-To recognize the structure and function of endocrine glands 5-To identify diseases related to abnormalities in hormone secretion					

1. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1.	Traditional classroom	10	77%
2.	E-learning	1	%7.7
3.	Hybrid • Traditional classroom • E-learning		
4.	Distance learning	1	%7.7

2. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	**11**
2.	Laboratory/Studio	**22**
3.	Field	-
4.	Tutorial	-
5.	Others (Self learning)	2
	Total	35

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	Knowledge and understanding			
1.1	Define all principals, concepts, theories and aspects concerning with endocrinology.	K1.1	Lectures – Lab work	Theory Quiz, Practical Quiz, Final theory exam
1.2	Compare between different mechanisms, functions, practices and aspects related to endocrinology	K2.1	Lectures	Midterm theory exam, Final theory exam
1.3	Explain all processes, mechanisms, definitions, theories, mode of actions of endocrinology.	K2.2	Lectures - Lab work	Practical Assignment, Final theory exam
1.4	Interpret by using your knowledge and understanding some of phenomena concerning with endocrinology.	K3.2	Lectures	Final theory exam
2.0	Skills			
2.1	Argue different biological approaches in laboratory or field or even theoretically.	S2.2	Lectures – Lab work	Theory midterm, Final practical exam, Final theory exam

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
2.2	Design a biological experiment and procedures in laboratory or in the field or even theoretically.	S3.1	Lectures – Lab work	Final practical exam, Final theory exam
…	Write a report about any practical or theoretical tasks related to endocrinology.	S3.3	Lectures	Final theory exam
3.0	Values, autonomy, and responsibility			
3.1	Apply practices of life-long learning in endocrinology for their professional career.	V1.1	Lectures	Theory assignments

C. Course Content

No	List of Topics	Contact Hours
1.	Chemical messengers- Types of glands – Nervous and hormonal regulation- Basic characteristics of hormones -Function of hormones- Chemistry of hormones – Types of hormones- Regulation of hormone secretion – Synthesis of hormones- Transport of hormones – Mechanism of hormone action- Downregulation and upregulation of hormone- Hormonal interaction.-	4
2.	Hypothalamus and Pituitary gland: Anatomy – Hormones of hypothalamus (PIH, PRH, GHRH, GHIH, CRH, TRH, GnRH) – Regulation of hypothalamic hormones to anterior pituitary gland. Hormones of anterior pituitary gland (Prolactin, GH, FSH, LH, TSH and ACTH) – hormones of posterior pituitary gland (Oxytocin- ADH) – Control of pituitary gland to other endocrine glands.	2
3	Thyroid gland: Anatomy – hormones of thyroid gland (T3, T4, and Calcitonin) – Biosynthesis of thyroid hormones – Control of thyroid hormones – Hypothyroidism and Hyperthyroidism symptoms.	1
4	Parathyroid gland: Anatomy – Role of parathyroid hormone in calcium homeostasis – Role of hormones in regulation of calcium (Calcitonin – Parathormone – 1,25 dihydroxyl vitamin D). Parathyroid dysfunction.	1
5	Adrenal gland: Anatomical and histological structure – Hormones of adrenal cortex – Hormones of adrenal medulla – Control of cortical and medullary hormones – Role of medullary hormones in emergency – Role of cortical mineralocorticoids, glucocorticoids and androgens	1

6	Pancreas: Anatomical and histological structure – Types of cells in Langerhans islands – Insulin – Glucagon – Somatostatin – Role of pancreatic hormones in glucose homeostasis – Diabetes type 1 – Diabetes type 2.	1
7	Gonads: Testes and ovaries – Testosterone hormone – Estrogen hormone – Progesterone hormone – Role of female sex hormones in regulation of menstrual cycle – Placenta as a temporary endocrine gland- HCG hormone and its role in pregnancy.	Self learning
8	Pineal gland: Anatomy – Pinealocytes – Melatonin hormone Thymus gland: Anatomy – Function of thymus gland – Thymosin hormone – Thymopoietin hormone.	Self learning
9	Other endocrine organs: Heart – Kidney – Fat tissues –Stomach – Duodenum – Atriopeptin hormone – Erythropoietin – Leptin hormone – Factors regulating blood Leptin – Gastrin hormone – Ghrelin hormone – Secretin hormone – Pancreozymin hormone – Enterogastrone hormone – Incretins – Irisin hormone	1
Total		11

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Theoretical Quiz	4	5
2.	Practical Quiz	5	5
3.	Theory Midterm	6	10
4.	Theory Homework	7	5
5	Practical Homework	9	5
6	Practical Final	11	20
7	Final exam	15	50

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.)

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	علم الغدد الصماء. تأليف الدكتور مدحت حسين خليل محمد. جامعة الأزهر (1997)، مكتبة المدينة- العين – الإمارات العربية المتحدة Endocrinology (1997) by Dr. Medhat H Khalil, Al-madina Library, Al Ain- UAE.
Supportive References	➢ Endocrine Physiology by Patricia E. Molina. (Fifth Edition) A LANG Medical Book. ISBN 978-0-07-161301-9 Publishers McGraw Hill Companies, Inc. (2018).

	➢ Guyton and Hall Textbook of Medical Physiology 14th edition (2020) by John E. Hall PhD, Pub. Saunders, pp. 840-949 ➢ Williams textbook of Endocrinology, 14th edition (2019) by Shlomo Melmed, Ronald Koenig, Clifford Rosen, Richard Auchus, Allison Goldfine
Electronic Materials	http://www.vivo.colostate.edu/hbooks/pathphys/endocrine/index.html https://www.webteb.com/endocrine-system
Other Learning Materials	

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	1 Lecture room(s) for groups of 25 students. 1 Laboratory for group of 15 students
Technology equipment (projector, smart board, software)	AV, data show, Smart Board
Other equipment (depending on the nature of the specialty)	NA

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Students, Faculty	Direct (Questionnaire)
Effectiveness of students assessment	Peer Reviewer	Direct (Cross Check marking)
Quality of learning resources	QA. Committee	Indirect (Benchmarking)
The extent to which CLOs have been achieved	Program Leader	Indirect (QA Committee)
Other		

Assessor (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)
Assessment Methods (Direct, Indirect)

G. Specification Approval Data

COUNCIL /COMMITTEE	Biology Department Board
REFERENCE NO.	BIO2214
DATE	20/9/2022AD