

COURSE DESCRIPTION FORM

Department: **Biological Sciences**

Program: **Animal Biology**

COURSE DESCRIPTION

Course Title: **Endocrinology**

Course Number: **0493-403**

Course Level: ☒ Undergraduate ☐ Postgraduate

Course Type: ☐ University Requirements ☐ Department Requirements
☐ Major Compulsory ☒ Major Elective
☐ Minor Compulsory ☒ Minor Elective

Credit Hours: ☐ 1 credit ☐ 2 credits ☒ 3 credits ☐ 4 credits

Lecture Hours per Week: ☐ none ☐ 1 hour ☒ 2 hours ☐ 3 hours

Lab Hours per Week: ☐ none ☐ 2 hours ☒ 3 hours ☐ 6 hours

Tutorial Hours per Week: ☒ none ☐ 1 hour ☐ 2 hours

Credits: (1-2-3)

Recommended Textbook(s):

The Endocrine System at a Glance 3rd edition. Ben Greenstein & Diana Wood

Catalogue Brief Description:

Endocrinology system definition, names and location of some endocrine glands, hormone types, biosynthesis. Endocrine system strategy. Understanding the structure and function of hypothalamus and pituitary hormones. Adrenal gland, Cortisol hormone biosynthesis and function. Thyroid Gland & Thyroid hormone biosynthesis and function. Sexual differentiation & development of male and female reproductive systems and hormone's function. Calcium hormones regulations. Renin-angiotensin-aldosterone system. Popular diseases related to endocrine system hormones and available treatments.

Lectures Course Topics:

1. Endocrinology definition, names and location of some endocrine glands, hormone types and biosynthesis.
2. Mechanism of Hormone action.
3. Endocrine System Strategy.
4. The hypothalamus and pituitary gland, and Hormone Families.
5. Oxytocin & Vasopressin structures and functions.
6. POMC.
7. Adrenal Gland, Cortisol biosynthesis and function.
8. Thyroid Gland & Thyroid Hormone biosynthesis and function.
9. Sexual Differentiation & Development.
10. Male Reproduction.
11. Female Reproduction.
12. Calcium hormones regulations.
13. Renin-angiotensin-aldosterone system.

Practical Topics (Laboratory)

1. Anatomy of the major endocrine glands and genital system of the Rat (male & female).
2. Histology of the endocrine glands (Thyroid, Para thyroid, Pancreas, and pituitary).
3. Histology of the endocrine glands (Adrenal, Testes, and Ovaries).
4. Steroids and Proteins biochemical testes.
5. Anatomy of the frog urinogenital system and frog pregnancy test.
6. Effect of insulin on Goldfish and gonadectomy in the rat.
7. Effect of the topical steroids.
8. Action of Thyroid gland and thyroxine effect.

ASSESSMENT METHODS & GRADING

- Check all forms of assessments that may be used for this course.

☒ Term Exams	20 %
☒ Quizzes	10 %
☐ Homework/Assignments/Quizzes	%
☐ Computer Assignments	%
☐ Term Paper/Projects	%
☒ Oral Presentation	7.5 %
☐ Poster Presentation	%
☒ Lab. Work	22.5 %
☐ Fieldwork	%
☐ Class Participation/Activity	%
☒ Other Extra Credit Presentation	+5 %
☒ Lectures Final Exam	40 %
Total	100 %

COURSE LEARNING OUTCOMES

By the end of this course, students will be able to:

- ❶ Understand the Endocrine system
- ❷ Introduce the main glands in human body.
- ❸ Develop knowledge and understanding of hormone types, biosynthesis, mechanism of action, structure and functions.
- ❹ Study the histology and anatomy of some glands.
- ❺ Encourage the students to perform comprehensive presentations and discussions.
- ❻ Relating the hormones mechanism of action to most popular diseases and discuss types of treatments available.

Relevance Rate to the Course Learning Outcomes

Course Learning Outcomes	Example(s) of Relevant Topics/Activities	Relevance Rate
❶	The endocrine system	H
❷	The main glands in human body	H
❸	Hormone types, biosynthesis, mechanism of action, structure and functions	H
❹	Histology and anatomy of some glands	H
❺	Presentations and discussions	M
❻	Diseases and treatments	M

PROGRAM LEARNING OUTCOMES

Using the labels H, M, or L, rate the relevance of each **Course Learning Outcome** in the learning outcome matrix below to the **Program Learning Outcomes** where applicable.

		COURSE LEARNING OUTCOMES					
		①	②	③	④	⑤	⑥
PROGRAM LEARNING OUTCOMES	1. Apply the scientific method to questions in animal biology and perform qualitative and quantitative analysis and interpretation of biological data to demonstrate proficiency in the experimental techniques and methods of analysis appropriate for their area of specialization within animal biology.	L	L	M	H	H	L
	2. Identify the major groups of organisms with emphasis on animals and be able to classify them within a phylogenetic framework to compare and contrast the characteristics of animals that differentiate them from other forms of life.	L	L	L	L	L	L
	3. Comprehend the breadth of studies on the biology of animals as they relate to evolution, adaptation, behavior and ecology.	L	L	L	L	L	L
	4. Explain how organisms' function at the level of the gene, genome, cell, tissue, organ and organ-system thus appreciating the complexities of animals.	H	H	H	H	L	H
	5. Relate the physical features of the environment to the structure of animal populations, communities, and ecosystems.	L	L	L	L	L	L
	6. Integrate related topics in animal biology from separate parts of the course or courses.	H	H	H	H	H	H

	7. Access primary literature, identify a particular topic and evaluate its scientific content and extract information from biological literature, and communicate it effectively in writing scientific reports and essays in the field of animal biology.	H	M	H	M	H	H
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DEPARTMENT LEARNING OUTCOMES

Using the labels H, M, or L, rate the relevance of each **Course Learning Outcome** in the learning outcome matrix below to the **Department Learning Outcomes** where applicable. (A summary of the Department Learning Outcomes is provided in a separate document).

		COURSE LEARNING OUTCOMES					
		①	②	③	④	⑤	⑥
DEPARTMENT LEARNING OUTCOMES	1.						
	2.						
	3.						
	4.						
	5.						

Course Coordinator: DR. Jasem Alrubaian

Program: Animal Biology