

ENDOCRINOLOGY

Semester	Subject Code	Category	Lecture		Theory		Practical	Credits
			Hrs/ week	Total Hours/ Semester	Hrs/ week	Total Hours/ Semester		
II	21CPZO2D	Elective-II	3	45	3	45	Nil	3

COURSE OBJECTIVES

- To acquire knowledge on the structure of Thyroid gland, Parathyroid, Adrenal, Thymus and Pineal gland. To acquire knowledge on the synthesis of their hormones.
- To Understand the gastrointestinal hormones and sex hormones. To understand the role of hormones in pregnancy and lactation.

COURSE OUTCOMES

On the successful completion of the course, students will be able to:

CO Number	CO Statement	Knowledge Level (K1-K4)
CO1	To understand the structure and functions of hormones and its mechanism.	K2
CO2	To understand the structure and functions of Pituitary, Thyroid and Parathyroid glands.	K2
CO3	To understand Structure and functions of the, pancreas, pineal gland, adrenal glands and their action on stress management.	K2 & K3
CO4	To acquire knowledge on the hormones secreted by insects, crustaceans and moulting.	K4
CO5	To understand the hormonal control of anuran amphibians and reproductive hormones of male and female gametes in human.	K3

Knowledge Level : K1-Remember ; K2 –Understand ; K3 – Apply ; K4 – Analyze

MAPPING WITH PROGRAMME OUTCOMES

COS	PO1	PO2	PO3	PO4	PO5
CO1	S	M	M	M	S
CO2	M	S	S	S	M
CO3	S	S	S	M	S
CO4	S	S	M	S	M
CO5	S	S	S	S	S

S- Strong; M – Medium ; L- Low

DISTRIBUTION OF MARKS: THEORY 100%

UNIT-I**9 Hours****INTRODUCTION TO ENDOCRINOLOGY**

Introduction, objectives and scope of endocrinology - modern concepts and problems in Endocrinology - endocrine glands in crustaceans, insects and vertebrates. Experimental methods of hormone research - general classes of chemical messengers.

UNIT-II**9 Hours****PITUITARY AND THYROID GLANDS**

Pituitary gland - characteristics, structural organization-adenohypophysis and neurohypophysis - hormone secretion, its functions and disorders - Hypothalamic control – Feedback mechanism and releasing factors.

Thyroid gland - structural organizations, metabolic effects of thyroxine and thyroid dysfunction - effects on reproduction - parathyroid - its structure and functions.

UNIT-III**9 Hours****PANCREAS AND ADRENAL GLANDS**

Structure of pancreas, pancreatic hormones and their functions. Regulation of insulin secretion Structural organizations of adrenals, functions of cortical and medullary hormones – Emergency hormones.

UNIT-IV**9 Hours****INSECTS AND CRUSTACEAN ENDOCRINOLOGY**

Concepts of neurosecretions - endocrine systems in crustaceans - endocrine control of molting and metamorphosis - neuroendocrine system in insects - endocrine control of molting - metamorphosis and reproduction.

UNIT-V**9 Hours****VERATEBRATE REPRODUCTIVE ENDOCRINOLOGY**

Structure of mammalian testis and ovary - male and female sex accessory organs - hormones of testis and ovary – hormonal regulation of estrous and menstrual cycle - hormones of pregnancy - parturition - hormonal control of lactation. Hormonal control of metamorphosis in an anuran amphibian.

TEXT BOOKS

S.N O	AUTHORS	TITLE	PUBLISHERS	YEAR OF PUBLICATION
1.	Barrington, E.J.W.	An introduction to general and comparative endocrinology	Claredon Press Oxford.	1985

2.	Philip felig, Lawrence A. Frohman	Endocrinology and Metabolism	McGraw-Hill Medical	2001
3.	Melmed, Shlomon Williams and Robert Hardin.	Textbook of endocrinology	Philadelphia: Elsevier/Saunders.	2011
4.	Shlomo Melmed, Kenneth S. Polonsky MD	Textbook of Endocrinology	Elsevier Publications	2016
5.	Mala Dharmalingam	Textbook of Endocrinology	Jaypee Publications	2010

REFERENCE BOOKS

S.NO	AUTHORS	TITLE	PUBLISHERS	YEAR OF PUBLICATION
1.	Haris, G.W. and B.T. Donovan	The Pituitary Gland	S. Chand and Co.	1968
2.	Bentley, P.J	Comparative vertebrate endocrinology	Cambridge University Press. Cambridge	1985
3.	Turner, C.D. and J.T. Bangara	General endocrinology Saunders International Student edition.	Toppan Company Limited. Tokyo	1986
4.	Ingleton, P.M. and J.T. Bangara	Fundamentals of comparative vertebrate endocrinology	Kluwer Academic Publishers.	1986
5.	Mac Hadley	Endocrinology, 3 rd Edition	A Simon & Schuster Company, Englewood Cliffs, New Jersey. USA.	1992

WEB SOURCES:

www.sciencemag.com

www.treehugger.com

www.nature.com

TEACHING METHODOLOGY

- Class room teaching
- Assignments
- Discussions
- Home test
- PPT Presentations
- Demonstration from the Video slides, videos and interactive software.

SYLLABUS DESIGNERS

- Dr D.Sasikala, Assistant Professor & HOD
- Dr.V.Kiruthiga, Assistant Professor
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