

Course Code	Course Name	Credits
26ZY109	ENDOCRINOLOGY	04

Course Objectives

- To understand the structure and functions of endocrine glands.
- To study hormones and their mechanisms of action.
- To develop knowledge on endocrine regulation and homeostasis.
- To understand endocrine disorders and their physiological effects.
- To enhance knowledge on applied and comparative endocrinology.

Learning Outcomes

- Explain the organization and functions of endocrine glands.
- Identify different hormones and their physiological roles.
- Demonstrate knowledge of hormonal regulation mechanisms.
- Analyze endocrine disorders and associated diseases.
- Apply endocrinological concepts in health and disease management.

Unit 1 - Introduction to Endocrinology (12 Hrs.)

Definition, scope and history of endocrinology; endocrine glands and hormones; classification of hormones; mechanisms of hormone action; feedback regulation.

Unit 2 - Hypothalamus, Pituitary, and Thyroid Glands (12 Hrs)

Structure and functions of hypothalamus and pituitary gland; pituitary hormones; thyroid gland and thyroid hormones; disorders of thyroid function.

Unit 3 - Adrenal and Pancreatic Hormones (12 Hrs.)

Structure and functions of adrenal gland; corticosteroids and catecholamines; endocrine pancreas and insulin; diabetes mellitus and metabolic disorders.

Unit 4 - Reproductive Endocrinology (12 Hrs.)

Hormonal regulation of reproduction; male and female reproductive hormones; menstrual cycle; pregnancy and lactation; endocrine control of reproduction.

Unit 5 - Comparative and Applied Endocrinology (12 Hrs.)

Endocrine regulation in vertebrates and invertebrates; stress physiology; endocrine disruptors; endocrine disorders and diagnostic techniques; applications in medicine and biotechnology.

Reference Books:

1. Hadley, M.E. and Levine, J.E. (2018). Endocrinology. Pearson.
2. Turner, C.D. and Bagnara, J.T. (2016). General Endocrinology. Saunders.
3. Norris, D.O. (2020). Vertebrate Endocrinology. Academic Press.
4. Guyton, A.C. and Hall, J.E. (2019). Textbook of Medical Physiology. Elsevier.
5. Williams, R.H. (2017). Textbook of Endocrinology. Saunders.

Websites and eLearning Sources:

1. <https://www.endocrine.org/>
2. <https://www.ncbi.nlm.nih.gov/>
3. <https://www.biologydiscussion.com/>

