

Bankura Christian College

Department of Physiology

3rd YEAR: SEMESTER-V (Academic Session: 2023-24)

Course Code: SH/PHY/502/C-12

Course ID: 52512

Credit- 04; Full Marks: 35

Classes: 11(Lecture) +01(Class test/Revision)

Course Title: Endocrinology, Dr Rajkumar Maiti

Course Learning Outcomes:

1. From this core course students will develop their knowledge about elementary idea on endocrine glands.
2. Introduction
3. The renin-angiotensin system.
4. Erythropoietin.
5. The Endocrine Function of the Heart: Atrial natriuretic peptide.
6. Pineal Gland-Neuroendocrine gland and function of melatonin.
7. Human Chronobiology, biological rhythms; basic concepts and implications.

Topics allotted

Endocrine Functions of the Pancreas and the Regulation of Carbohydrate Metabolism

1. Introduction,
2. Histology of pancreas.
3. Structure, biosynthesis, and secretion of insulin.
4. Function of insulin.
5. Mechanism of action.
6. Insulin excess.
7. Regulation of insulin secretion.
8. Glucagon - Biosynthesis and function.
9. Blood sugar homeostasis.
10. Other Islet cell hormones.
11. Hypoglycemia and diabetes mellitus in human.

Endocrine Functions of the Kidneys, Heart, and Pineal Gland

1. Introduction
2. The renin-angiotensin system.
3. Erythropoietin.
4. The Endocrine Function of the Heart: Atrial natriuretic peptide.
5. Pineal Gland-Neuroendocrine gland and function of melatonin.
6. Human Chronobiology, biological rhythms; basic concepts and implications.

MONTH/YEAR	WEEK	PORTIONS
August 2023	5	Introductory ideas on endocrine functions of the pancreas and the regulation of carbohydrate metabolism
MONTH/YEAR	WEEK	PORTIONS
September 2023	1	Histology of pancreas and structure, biosynthesis, and secretion of insulin. (Class-1)
	2	Function of insulin and mechanism of action (Class-1)
	3	Insulin excess and Regulation of insulin secretion. (Class-2)
	4	Glucagon - Biosynthesis and function. (Class-1)
MONTH/YEAR	WEEK	PORTIONS
October 2023	1	Glucagon - Biosynthesis and function and blood sugar homeostasis (Class-2)
	2	Other Islet cell hormones, Hypoglycemia and diabetes mellitus in human
MONTH/YEAR	WEEK	PORTIONS
November 2023	1	The renin-angiotensin system and Erythropoietin
	2	The Endocrine Function of the Heart: Atrial natriuretic peptide
	3	Pineal Gland-Neuroendocrine gland and function of melatonin (Class-1)
	4	Human Chronobiology, biological rhythms; basic concepts and implications (Class-2)
MONTH/YEAR	WEEK	PORTIONS
December 2023	1	Revision on Endocrine Functions of the Pancreas

Suggested Books

1. Hall J.E. (2016). Guyton & Hall Textbook of Medical Physiology. Second South Asia Edition.
2. Mahapatra, A.B.S.M. (2014). Essentials of Medical Physiology. Fourth Edition. Current Books International.
3. Sembulingam K. and Sembulingam, P. (2016). Essentials of Medical Physiology 7th Edition. Jaypee.
4. Khurana I. (2015). Medical Physiology. 2nd Edition. Elsevier India.
5. Chatterjee C.C. (2016). Human Physiology Volume 1. Eleventh Edition. CBS. Publishers & Distributors Pvt. Ltd.

Rajkumar Maiti