

Bankura Christian College
Department of Physiology

2nd YEAR: SEMESTER-III (Academic Session: 2023-24)

Course Code: SP/PHY/301/C-1C

Course ID: 32518

Credit- 02; Full Marks: 35

Classes: 09(Lecture) + 02 (Class test/Revision)

Course Title: Digestive System, Metabolism, Nutrition and Excretory System

Dr Rajkumar Maiti

Course Learning Outcomes:

- From this core course students will gather knowledge about digestion and absorption of principle food stuff.
- They will develop their knowledge in carbohydrate, protein and fat metabolism and their integrated pathway.
- Student will develop the knowledge about basic components of food with their nutritional values along with nutritional assessment in different food stuff.
- Developing the knowledge how excretory system functioning.

Topics allotted

Digestive system:

1. Anatomy of alimentary system.
2. Mastication, deglutition, movements of the alimentary canal and significance.
3. Composition and functions of digestive juices and bile.
4. Digestion and absorption of carbohydrate, protein and lipid.
5. Blood Pressure – Definition, types, measurement and regulation.

Nutrition

1. Basic constituents of food and their nutritional significance, dietary fiber and its importance.
2. Vitamins: Definition, sources, daily requirements, functions, deficiency symptoms (Vitamin-A, D, E, K, C & B12) and hypervitaminosis.
3. Mineral: Sources, daily requirements, functions and deficiency (Na, K, Ca, I, P and Fe).
4. BMR: Definition, factors affecting and determination by Benedict-Roth apparatus.
Respiratory quotient: Definition, factors affecting and significance.
5. Brief idea on: Nitrogen balance, biological value of proteins, digestibility coefficient, net protein utilization, protein efficiency ratio. Supplementary action of protein, specific dynamic action and protein sparing foods.
6. RDA, Adult Consumption Unit and NPN.
7. Diet chart preparation - College student, pregnant and lactating mother.

MONTH/YEAR	WEEK	PORTIONS
September 2023	1	Anatomy of alimentary system.
	2	Mastication, deglutition, movements of the alimentary canal and significance.
	3	Composition and functions of digestive juices and bile.
	4	Digestion and absorption of carbohydrate, protein and lipid.
MONTH/YEAR	WEEK	PORTIONS
October 2023	1	Class test on Digestive system
	2	Blood Pressure – Definition, types, measurement and regulation.
MONTH/YEAR	WEEK	PORTIONS
November 2023	1	Basic constituents of food and their nutritional significance, dietary fiber and its importance. Vitamins: Definition, sources, daily requirements, functions, deficiency symptoms (Vitamin-A, D, E, K, C & B12) and hypervitaminosis.
	2	Mineral: Sources, daily requirements, functions and deficiency (Na, K, Ca, I, P and Fe). BMR: Definition, factors affecting and determination by Benedict-Roth apparatus. Respiratory quotient: Definition, factors affecting and significance.
	3	Brief idea on: Nitrogen balance, biological value of proteins, digestibility coefficient, net protein utilization, protein efficiency ratio. Supplementary action of protein, specific dynamic action and protein sparing foods.
	4	RDA, Adult Consumption Unit and NPN. Diet chart preparation - College student, pregnant and lactating mother.
MONTH/YEAR	WEEK	PORTIONS
December 2023	1	Class test on Nutrition

Suggested Books

1. Mahapatra, A.B.S.M. (2011). Essentials of Medical Physiology Practical. First Edition. Current Books International'.
2. Srilakshmi, B. (2015). Food Science. Sixth Edition. Age International Publishers.
3. Swaminathan, M. (2012). Handbook of Food and Nutrition. Jain Book Agency.
4. Khurana I. (2015). Medical Physiology. 2nd Edition. Elsevier India.
5. Chatterjee C.C. (2016). Human Physiology Volume 1. Eleventh Edition. CBS. Publishers and Distributers Pvt. Ltd.
6. Basak A .K. (2016). Textbook of Physiology for BDS. New Central Book Agency (P) Ltd. 3rd Edition.

Rajkumar Maiti