

PRINCIPLES OF HUMAN NUTRITION

Sem	Subject Code	Category	Lecture		Theory		Practicals	Credits
V	19CNF5B	Core paper IV	Hrs/sem	Hrs/Per week	Hrs/sem	Hrs/Per week	-----	5
			90	6	90	6		

COURSE OBJECTIVE:

1. To introduce the students to the principle of Human Nutrition
2. To gain skill in qualitative tests and quantitative estimation of nutrients

COURSE OUTCOMES

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

CO Number	CO Statement	Knowledge Level (K1-K4)
CO1	Learning about the carbohydrates	K1, K2
CO2	To understand about the energy	K2, K3
CO3	To learn about the lipids	K2, K3
CO4	Learning about the vitamins	K2, K3, K4
CO5	Knowing about the minerals and water	K2. K3. K4

Knowledge level: K1 – Remember, K2-Understand, K3- Apply, K4-Analyse.

MAPPING WITH PO

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

S-Strong; M-Medium, L- Low

UNIT –I

18 Hours

CARBOHYDRATES

Carbohydrates – Definition and composition, classification, Review of digestion, absorption and metabolism – Regulation of blood sugar, Hormonal controls, functions of carbohydrates in the body. Dietary fibre – definition, soluble and insoluble fibres, sources of fibre, components and physiological effects of dietary fibre, Role of fibre in human nutrition, sources and requirements

UNIT-II

18 Hours

ENERGY

Energy Units – Kilocalories, Mega joules, determination of energy value of foods using Bomb Calorimeter, gross calorific values, Physiological energy value of foods, relation between oxygen used and calorific value, determination of direct calorimetry.

Relation between Respiratory quotient, and energy output-specific dynamic action of food, indirect calorimetry – Basal metabolism – definition, determination-Benedict Roth basal metabolism Apparatus- factors affecting BMR – recommended allowances for calories, energy requirements of adults expressed in terms of Reference man and Reference woman.

UNIT – III

18 Hours

LIPIDS

Lipids – classification, composition function – essential fatty acids, deficiency food sources of EFA, Function of TGL, DHA, Sterols-cholesterol-function, food sources, phospholipids-function, ketone bodies – fat requirements – food sources

UNIT – IV

18 Hours

VITAMINS

Fat soluble vitamins-Vitamin A,D,E,K – functions, effects of deficiency, sources, requirements, units of measurement and hyper-vitaminosis.

Function, effects of deficiency, sources and requirements of water-soluble vitamins, ascorbic acid, thiamine, riboflavin and Niacin, Importance of folic acid, Vitamin B12, Pyridoxine, Biotin and Pantothenic acid to the body.

UNIT – V**18 Hours****MINERALS AND WATER**

Distribution in the body, functions, food sources, requirements and effects of deficiency of calcium, phosphorus, iron and Iodine

Trace elements in human nutrition – copper, fluorine, zinc-functions, food sources, requirements and effects of deficiency

Selenium and vitamin E relationship, chromium and glucose tolerance factor

Distribution of water in the body, water intake and loss, exchange of water in the body, composition of body fluids, water exchange between plasma fluids.

Distribution of Marks: Theory – 25 (IA) + 75 (univ. exam) = 100 Marks

TEXT BOOKS:

S.NO	AUTHORS	TITLE	PUBLISHERS	YEAR OF PUBLICATION
3	Wardlaw, G.M. Insef, P.H	Perspectives in Nutrition	Times Mirror I. Mosby college publishing Co.St.Louis, Toronto, Boston.	1990
4	William; Sue Rodwell.	Nutrition and Diet Therapy, 5 th edition	Mosbey Co. St, Louis	1985
5	M. Swaminathan	“Principles of Nutrition and Dietetics”	Bappeo88	1993
6	Maurice E Shills	“Modern nutrition in health and disease	A waverly company	1994

REFERENCE BOOKS:

S.NO	AUTHORS	TITLE	PUBLISHERS	YEAR OF PUBLICATION
2	Srilakshmi	Nutrition science	New Age International Private Ltd	2008