

SRI VENKATESWARA UNIVERSITY :: TIRUPATI

**FIRST YEAR B.Sc. CLINICAL NUTRITION AND DIETETICS
FIRST SEMESTER**

Revised Syllabus Under CBCS W.E.F. 2020-21

CN -101- BASIC NUTRITION

Outcomes of the course

At the end of the course the student will be able to demonstrate the following:-

A) Remembers and explains in a systemic way

- Understanding the concepts of nutrition and food and its relation to health.
- Acquiring knowledge about macro and micro nutrients and their functions.
- Knowing the consequences of deficiency of nutrients.
- Understanding importance of non-nutrients in human nutrition

B) Understands and Uses

- Planning recipes by selecting appropriate foods based on the macro and micro nutrient composition.
- Selection of foods based on the nutrient composition for healthy and disease people.

C) Critically explains, judges and solves

- Planning and calculating nutritive values for the foods and recipes.
- Identification of signs and symptoms of different nutrient disorders.
- Practical knowledge on availability of seasonal and other foods by doing market survey.
- Listing out the common foods and their names in scientific and local languages.

D) Working in out of prescribed area under a co-curricular activity

- Selection of foods based on seasonal availability and planning recipes on the nutrient composition to healthy and diseased conditions.

E) Practical skills

- Market survey on different foods available and learning local and scientific names.
- Learn to identify different food samples and to know their nutrient composition.
- Planning of recipes according to nutrient components.

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Theory:4hrs/week
Practical: 2 hrs/week

THEORY

UNIT-I Introduction to Nutrition and Macro Nutrients

- Introduction and scope of Nutrition, definitions, relationship between Food, Nutrition, Health and Disease
- Macro Nutrients – Classification, functions, digestion, absorption, dietary sources, RDA, clinical manifestations of deficiency and excess and storage of the following in the body.
 - Carbohydrates
 - Lipids
 - Proteins

UNIT – II Micro nutrients- Vitamins

- Vitamins – Classification, functions, dietary sources, RDA, clinical manifestations of deficiency and excess of the following
 - Fat soluble vitamins - A, D, E and K
 - Water soluble vitamins - B Complex Vitamins - Thiamine, Riboflavin, Niacin, Pyridoxine, Folic acid, Cyanocobalamin and Vitamin C.

UNIT - III Minerals

- Minerals – classification, functions ,dietary sources, RDA, clinical manifestations of deficiency and excess of the following
 - Macro minerals – Calcium, Phosphorous, Magnesium, Sodium and Potassium
 - Micro minerals or Trace elements – Iron, Iodine, Fluorine and Zinc

UNIT - IV Energy

- Energy value of foods – Determination of gross energy value of foods using Bomb calorimeter and Oxy calorimeter. Physiological energy value of foods.
- Basal Metabolism - Factors affecting Basal Metabolic Rate, Measurement of BMR by Direct and Indirect Calorimetry. Determination of BMR by calculations.
- Computing Total Energy Requirement of the body based on Basal metabolic rate, Physical activity and Thermic effect of food. RDA and sources of energy.

UNIT – V Water and Non Nutrient constituents of Food

- Water - Functions, sources, requirement and regulation of water balance, Effect of deficiency and excess - Dehydration and over hydration; Electrolyte balance.
- Non nutrient constituents of foods and their importance
 - Phytochemicals – Curcumin, Lycopene, Flavonoids
 - Antioxidants – Vitamin C, E and Carotenoids
 - Detoxifying agents - Anthocyanins, Chlorophylls
 - Beneficial effects of non- nutrient constituents of food on Health.

PRACTICALS

1. List out the common foods and to learn their names in Telugu, English, Hindi and Urdu.
2. Learn to identify the different food samples and to know their nutrient composition.
3. Market survey
Dietary sources, Recommended Dietary Allowances and planning of recipes of the following nutrients
4. Macronutrients
 - Carbohydrates
 - Proteins
 - Fats
 - Fiber
5. Micronutrients
 - Vitamins –
 - Vitamin A
 - Vitamin C
 - Minerals –
 - Calcium
 - Iron

REFERENCES

1. Bamji MS, Krishnaswamy K, Brahmam, (2016) Textbook of Human Nutrition, 4th edition. Oxford and IBH Publishing Co. Pvt. Ltd.
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3. Raheena Begum, (2013). Textbook of Food, Nutrition and Dietetics, 3rd edition, Sterling Publishers Pvt. Ltd.
4. RavinderChada and PulkitMathur, (2015). Nutrition – A Life Cycle Approach, 1st edition, Orient Black Swan Private Limited
5. Shubhangini A. Joshi, (2002). Nutrition and Dietetics, 2nd edition, Tata McGraw-Hill Publishing Company Ltd.
6. Srilakshmi, B., (2018). Nutrition Science, 6th edition, New Age International Publishers.
7. Swaminadhan S, (2005). Advanced Text book on foods & nutrition, Vol. I&II (2nd revised and enlarged) Bappco.
8. VijayaKhader, (2000). Food, nutrition & health, Kalyani Publishers.

CO-CURRICULAR ACTIVITIES

1. Student seminars on different nutrients.
2. Preparation of posters, charts, flashcards etc. related to different nutrients – Functions, RDA dietary sources, nutrient content of foods and deficiency symptoms.
3. Collections of food samples rich in particular vitamins and minerals like calcium, iron etc.
4. Visit to food stores, vegetable and fruit markets to study locally available foods.
5. Study projects to collect the data from people. Eg. Foods avoided or given in specific conditions.
6. Celebration of Important Days (National and International)
 - World’s Breast Feeding Week(August 1st -7th)
 - Nutrition Week - September 1st - 7th
 - Nutrition Month – September month
 - Hand Washing Day – October 15th
 - World Food Day – October 16th

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MODEL QUESTION PAPER

Time: 3 hrs.

Max. Marks: 75

Part – A

Answer any five Questions. Each question carries 5 Marks

(5x5 = 25 marks)

1. Classify carbohydrates.
2. Explain dehydration.
3. Write about Kwashiorkor.
4. What are the dietary sources and functions of zinc?
5. Define Food, Nutrition and Health. What are the visible symptoms of good health?
6. What are the functions of lipids?
7. Discuss the functions of Vitamin B1- Thiamine in the body.
8. Write about flourosis.

Part – B

Answer five Questions. Each Question carries 10 marks

(5x10= 50 marks)

9. a) Discuss the functions of Proteins.
(OR)
b) Write about the classification of Lipids.
10. a) Write about functions, deficiency and dietary sources of vitamin-A.
(OR)
b) Write about the functions, deficiency and dietary sources of vitamin-C.
11. a) Discuss the functions, deficiency, RDA and dietary sources of Iron.
(OR)
b) What are the functions of calcium? Give RDA and dietary sources of calcium for different age groups.

12. a) What is BMR? Discuss the factors that affect BMR.

(OR)

b) Explain the determination of energy value of foods by Bomb calorimeter.

13. a) What are Phytochemicals? Explain their beneficial effects on Health.

(OR)

b) Define water balance. Explain the regulation of water balance in the body
