Subject Code : CCSHM4

NUTRITION AND FOOD SCIENCE

UNIT I

1. Introduction

1.1 Definition,Nutrients,Importance
1.2 Function of food to man
1.3 Classification of Nutrients & foods.

2. Carbohydrates

2.1 Composition,Classification
2.2 Functions,Food sources
2.3 Daily requirements, excess and Deficiency.

3. Fats

3.1 Composition, Classification - Visible, Invisible, animal, plant, saturated & unsaturated.
3.2 Functions of fats & essential Fatty acids
3.3 Food sources including Cholesterol rich food & effect on health,effect of cooking on fats,hydrogenation & rancidity of oils-affecting health.
3.4 Daily Requirements,excess & Deficiency

4. Proteins

4.1 Composition, Classification
4.2 Functions
4.3 Food sources
4.4 Daily requirements, Excess and Deficiency.

UNIT II

1. Energy

Calorie-Definition,energy requirements-Factors affecting it-B.M.R,S.D.A, physical activity and climate.
Energy requirements for various age groups. High & low density foods.
Effect of energy imbalance.

2. Water

2.1 Importance,water balance,deficiency & oral rehydration.

3. Balanced diet

3.1 Meaning & importance of balanced diet. Four food groups.
3.2 Daily requirements –Recommended food tables for school children, adolescents & adult man, women to form a basis for menu planning.

UNIT-III

1. Minerals

1.1 Classification, functions, food sources& deficiency
1.2 Daily requirements of calcium, iron, sodium, iodine & fluorine.

2. Vitamins

2.1 Classification, fat soluble Vitamin A, D, E, K - functions, food sources, deficiency, daily requirements.
2.2 Water soluble vitamins, classification
2.3 B Complex- Thiamine, riboflavin, niacin, folic acid - functions, food sources, deficiency, daily requirements.
2.4 Ascorbic acid- functions, food sources, deficiency, daily requirements.
2.5 Nutritional losses upon cooking & ways to prevent it.

UNIT-IV

1. Food Microbiology

1.1 Introduction

2. Microbes

2.1 Classification according to five kingdom namely monera (bacteria), fungi (yeast & moulds), algae, plant & animal.
2.2 Bacteria-morphology (shape, arrangement, size & cell structure)
2.3 Beneficial effects of bacteria- manufacture of cheese, yoghurt, butter pickles, fermented foods like idlies, dosa, dokhla, naan & bhaturas, tea leaves curing & coffee beans, intestinal synthesis of vitamins.
2.4 Food Poisoning-Staphylococcal, salmonella, clostridium botulinam, perfringens - incubation period, duration, symptoms, causative foods, method of control.

3. Yeast

3.1 Cell – size, shape, structure.
3.2 Economic importance of yeast - bread, wine, beer & fermented fruit juices.

4. Moulds

4.1 Morphology-mucus, rhizopus, penicillium & aspergillus.
4.2 Beneficial effects of moulds-cheese ripening, enzymes, antibiotics, harmful effects of moulds-mycotoxins.

UNIT V

1. Safe food handling

1.1 Personal hygiene including uniform,medical check-up,safe food handling habits & training.
1.2 Control & Eradication of pests & rodents.
2. Garbage disposal- collection, storage & proper disposal from the premises.

REFERENCE BOOKS:

1. Nutrition & Dietetics- M. Swaminathan
2. Fundamentals of food & Nutrition- Sumathi R. Mudambi, M.V. Rajagopal
3. Microbiology- Anna K. Joshua.