

Biochemistry

Open Elective Course Code: OE-2T:BC-203;

Course Title: Nutrition and Dietetics (theory)

Course outcomes:

- ☑ The student will gain knowledge about energy requirements and the Recommended Dietary Allowances.
- ☑ The student will understand the functions and role of macronutrients, their requirements and the effect of deficiency and excess
- ☑ The student learns the impact of various functional foods on our health
- ☑ The student will be able to apply basic nutrition knowledge in making foods choices and obtaining an adequate diet.
- ☑ The student gains competence in connecting the role of various nutrients in maintaining health and learn to enhance traditional recipes.

Content of Theory course- Nutrition and Dietetics

Total credits =3

42 hr

Unit 1: Basic Concepts of Nutrition:

14 hr

Introduction, Basic principles of a balanced diet to provide energy and nutrients. Composition of foods and proximate analysis of foods. Calorific value of foods and Basal metabolism. Basal Metabolic Rate (BMR), Factors affecting BMR, Energy requirements for different physical activities, Specific dynamic action of food, Nutritive value of proteins. Energy requirements and recommended dietary allowance (RDA) for infants, children and pregnant women. Protein calorie malnutrition.

Unit 2: Macronutrients and Micronutrients:

14 hr

Carbohydrates- Digestible and non-digestible, Dietary fibers, Essential fatty acids, lipoproteins and cholesterol. Essential amino acids, Fortification of foods, Protein requirement for different categories.

Vitamins-Sources, requirements, functions and deficiency symptoms of Vitamin-C, Thiamine, Riboflavin, Pyridoxine, Folic acid, Vitamin B12. Absorption of fat-soluble vitamins- A, D, E and K.

Micronutrients: Source, Daily requirement, functions and deficiency disease symptoms of Macro-minerals (Ca, P, and Cl) and micro minerals/trace elements (I, Fe, Zn and Se).

Unit 3: Dietetics and Diet Therapy:

14 hr

Introduction. Food pyramid. Diet planning and introduction to diet therapy. Nutritional requirements for different age groups, anemic child, expectant women, and lactating women. Diet planning for prevention and cure of nutritional deficiency disorders.

Diet therapy: Functional foods, Anthropometric measurements, dietary considerations during fever, malaria, and tuberculosis. Prevention and correction of obesity, underweight, and metabolic diseases by diet therapy. Dietary interventions to correct and or manage the gastrointestinal diseases (indigestion, peptic ulcer, constipation, diarrhea, steatorrhea, irritable bowel syndrome.

Functional foods-based diet therapy for diabetes, cardiovascular disease and cancer.

References

1. Clinical Dietetics and Nutrition, 2002, Antia FP and Abraham P. Oxford University Press; 4th Edition. ISBN-10: 9780195664157.
2. Oxford Handbook of Nutrition and Dietetics, 2011, Webster-Gandy J, Madden A and Holds worth M. Oxford University Press, Print ISBN-13: 9780199585823.
3. Krause's Food, Nutrition and Diet therapy, 2003, Mahan KL and Escott-Stump S. Elsevier, ISBN: 9780721697840.
4. Human Nutrition and Dietetics. 1986, Passmore R. and Davidson S. Churchill Livingstone Publications, ISBN-10: 0443024863.
5. Rosemary Stanton's Complete Book of Food & Nutrition, 2007, Simon & Schuster Publishers, Australia, ISBN 10: 0731812999
6. Food Science and Nutrition, 2018, Roday S. Oxford University Press Publishers, ISBN: 9780199489084/0199489084.
7. Food Science, 2007, Srilakshmi S. New Age International (P) Limited Publishers, ISBN: 9788122420227/ 8122420222.