

6. Springthorpe VS, Sattar SA. Chemical disinfection of virus-contaminated surfaces. *CRC Critical Reviews in Environmental Control*, 1990, 20:169–229.
7. Recommendations on the transport of dangerous goods, 13th revised edition, New York and Geneva, United Nations, 2003, (http://www.unece.org/trans/danger/publi/unrec/rev13/13files_e.html).
8. Technical instructions for the safe transport of dangerous goods by air, 2003–2004 Edition. Montreal, International Civil Aviation Organization, 2002.
9. Economic Commission for Europe Inland Transport Committee. Restructured ADR applicable as from 1 January 2003. New York and Geneva, United Nations, 2002, (<http://www.unece.org/trans/danger/publi/adr/adr2003/ContentsE.html>).

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BCE 457: BIOCHEMISTRY IN DAY- TO- DAY LIFE: SOFTCORE

Lecture Hours: 36

Total Credits: 03

Course objectives

- To know the basic concepts of nutrition.
- To learn about macro and micronutrients, importance of water
- To study the significance of carbohydrates, proteins, fats and vitamins
- To bring awareness about effect of drugs on food and nutrition

Unit I

12 hrs.

Nutrition- Concepts of nutrients, essential nutrients and their classification. Basal Metabolic Rate (BMR), factors affecting BMR. Specific dynamic action (SDA) of foods. **Macro and micronutrients:** Sources, requirements, functions and deficiency symptoms. **Water:** Distribution in the body, function, special properties of water, water balances and factors affecting water balance. **Carbohydrates-** Dietary sources, Essentiality of carbohydrates, Dietary fibres.

Unit II

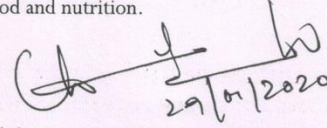
12 hrs.

Proteins- Essential amino acids, nutritional classification of proteins, supplementary value of proteins, protein calorie malnutrition. Kwashiorkor and Marasmus, Nitrogen balance, Malnutrition, protein calorific value. **Fats-** Sources, invisible fat, essential fatty acids. **Dietary formulation** for different age groups: children, adults, old age, pregnancy and lactating mother.

Unit III

12 hrs.

Vitamins- Fat soluble and water-soluble vitamins, pro-vitamins, antivitamins, dietary sources, daily requirement, function and deficiency symptoms of vitamins. Hyper-vitaminosis, vitamin-like compounds, disorders. **Food Drug Interaction:** Effect of drugs on food and nutrition.


 29/01/2020
 Chairperson, UG & PG Board of Studies in Biochemistry
 Department of Studies in Biochemistry
 Mangalore University, PG Centre
 Chikka Aluvvara, Thorenoor Post
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Course outcome

- Student learns the basic concepts of nutrition.
- Further he learns about macro and micronutrients, importance of water
- Also studies the importance of carbohydrates, proteins, fats and vitamins
- Learns about drug- drug reaction, food-drug reaction.

References:

1. Nutritional Biochemistry, Tom Brody (1994) Academic Press.
2. Frontiers in Nutrition, Ed. T. Wilson and N.J. Temple, (2000), Humana
3. Nutrition & Health in Developing Countries, eds. R. Semba and M.W. Bloem, (2000), Humana.

BCP 458: PRACTICAL ENZYMOLOGY: HARD CORE

Practical: 8 hours/week:

Total Credits: 04

Course objectives

- To have practical knowledge about enzyme kinetics
- To purify the enzymes by ammonium sulphate fractionation
- To calculate K_m , V_{max} of enzymatic reaction.
- To characterize invertase, acid phosphatase, protease and esterase from different sources

EXPERIMENTS

Salivary Amylase: Activity, Specific activity, Optimum pH and Temperature, pH and Temperature Stability, energy of activation, K_m , V_{max} , effect of metal ions, Purification by ammonium sulphate fractionation and enzyme characterization.

Assay methods and some characterization of invertase from yeast, acid phosphatase from potato, protease from papaya and esterase from peas. Immobilization of enzymes

Course outcome

- Student will have a practical knowledge about enzyme kinetics
- He is able to purify the enzymes by ammonium sulphate fractionation and
- calculate K_m , V_{max} of enzymatic reactions.
- Characterization of invertase, acid phosphatase, protease and esterase from different sources

References:

1. Enzymes: A Practical Introduction to Structure, Mechanism, and Data Analysis; Robert A. Copeland, Wiley- VCH Publishers (2000).
2. Enzyme Kinetics and Mechanism; Paul F. Cook, W. W. Cleland, Garland Science (2007).
3. Biochemical Calculations, Irwin H. Segel (1976) 2nd Ed. John Wiley and Sons.
4. Methods in Enzymology; Colowick S.P. et al., Vol. 152, Academic Press, (1987).
5. Methods of Enzymatic Analysis; Berg Meyer Vol. 1-X, (1974).