

Course Outcome:

- Develop skills to assess the total energy requirements, balance and its concepts depending on the individual specific needs.
- Identify body composition and its changes through life cycle and the techniques of measuring body composition.
- Describe carbohydrate chemistry and its role in energy metabolism.
- Describe protein, its metabolism and importance in normal physiological function of the body.
- Identify the requirements, metabolism, functions and deficiencies of lipids.

Unit I: Principles of nutrition - Body Composition. Changes in body composition through life cycle. Energy requirements (BMR, physical activity), energy balance, energy expenditure calculation of an average man and women. Importance of water and fibers. **Compositional and proximate analysis of food.**

Unit II: Carbohydrates: Classification, functions, digestion and enzymes involved, absorption, assimilation, **deficiency, requirements and sources. Significance of carbohydrate as energy source; trends in dietary intake of carbohydrate.**

Unit III: Proteins: Functions of protein, digestion and enzymes involved, absorption, assimilation, Nitrogen balance, amino acid pool, **requirements and dietary intake trends, quality of protein analysis, essential amino acids and therapeutic application of amino acid.**

Unit IV: Lipids: Significance of lipids and fatty acids, functions, deficiency, SFA, PUFA, MUFA, omega 3 fatty acids and omega 6 fatty acids, trans fatty acids, **requirements and dietary guidelines, fat metabolism – digestion and enzymes involved, absorption and assimilation.**

REFERENCES

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- Guthrie A.H., 1986. Introductory Nutrition - 6th edition, the C.V. Mosby company
- Swaminathan M., 1991. Essentials of food and nutrition - Vol I and II, Ganesh & Co. Madras
- Berg JM, Tymoczko JL and Stryer L., 2002. Biochemistry 5th ed. WH Freeman