

Learning Objectives

- To introduce students to the basic concepts of meal planning and food safety.
- To equip them with knowledge of physiological changes, nutritional requirements, nutritional concerns and healthy food choices during the life cycle.

Learning Outcomes

The students will be able to:

- Describe physiological changes and nutritional requirements across the lifespan.
- Understand the factors affecting meal planning.
- Plan and prepare balanced meals and nutritious snacks for various age groups.
- Apply the basic principles of food safety in daily life.

THEORY (Credits 3; Hours 45)

UNIT I: Nutrient requirements and fundamentals of meal planning 8 Hours

This unit will introduce the concept of nutrient requirements and meal planning.

- Nutrient requirement - Concept and background, Dietary reference intake, EAR, RDA, TUL and AI, reference man and reference woman.
- Introduction and use of food exchange lists
- Concept and importance of meal planning
- Factors affecting meal planning

Unit II: Nutrition during childhood 13 Hours

This unit will introduce physiological changes, nutritional requirements, nutritional concerns and healthy eating practices from infancy to adolescence.

- Infancy
- Preschoolers
- School- going children
- Adolescents

Unit III: Nutrition during adulthood and old age 4 Hours

This unit will introduce physiological changes, nutritional requirements, nutritional concerns and healthy food choices during adulthood and old age.

- Adulthood
- Pregnancy
- Lactation
- Old age

Unit IV: Introduction to food safety 10 Hours

This unit will introduce basic concepts of food safety, the principles, regulations and system approach that can help in achieving food safety.

- Key terms (Food Safety, Safe Food, Food Borne illness, Contaminants, Contamination, Food hygiene, Sanitation, Hazard, potentially hazardous food, food handler)
- Importance of Food Safety

- Factors affecting Food Safety (Contamination, Survival, Proliferation)
- HACCP, GHP (General Principles of Hygiene)
- Key functions of FSSAI

PRACTICAL **(Credits 1; Hours 30)**

1. Introduction to meal planning:
 - Use of comprehensive food exchange list in meal planning
 - Meal distribution and menu planning
 - Nutrient calculations
2. Planning and preparation of nutritious dishes/snacks:
 - Infancy
 - Preschooler child/School aged child/adolescent
 - Pregnant /lactating woman
 - Elderly
3. Planning and preparation of day's diet for an adult
4. Introduction to food safety:
 - Develop a checklist to study hygiene and sanitation practices in college canteen
 - Develop educational aid or presentation on any one standard or Regulation related to food safety.

Essential Readings

UNIT I

This unit introduces the concept of nutrient requirements and the scientific basis for meal planning. It covers Dietary Reference Intakes (DRIs) including EAR, RDA, TUL, and AI, along with the concepts of reference man and reference woman. The unit also explains the use of food exchange lists, the importance of meal planning, and the various factors influencing the planning of balanced meals.

- **Chowdhury, S. R., & Aeri, B. T. (2023).** *Textbook of food science and nutrition.* Aarahan Publishers.
- **Siddhu, A., Bhatia, N., Singh, K., Gupta, S. (Eds.). (2017).** *Lady Irwin College Technical series 6: Compilation of food exchange list.* Delhi: Global books organization.
- **Puri, S. et al (2020).** *Food exchange list- A tool for meal planning.* New Delhi: Elite publishing house.

UNIT II

This unit focuses on nutritional needs during different stages of childhood, from infancy to adolescence. It covers physiological changes, nutrient requirements, common nutritional concerns, and healthy eating practices essential for optimal growth, development, and overall well-being.

- **Chadha, R., & Mathur, P. (2015).** *Nutrition: A life cycle approach.* Delhi: Orient Blackswan.
- **Indian Council of Medical Research, & National Institute of Nutrition. (2020).** *Nutrient requirements for Indians: Recommended dietary allowances and estimated average requirements – 2020.* ICMR–National Institute of Nutrition.
- **Longvah, T., Anantan, I., Bhaskarachary, K., Venkaiah, K., & Longvah, T. (2017).** *Indian food composition tables* (pp. 2-58). Hyderabad: National Institute of Nutrition,

Indian Council of Medical Research.

- **Sethi, P., & Lakra, P.** (2015). *Aahar Vigyan, Poshan Evam Suraksha*. Delhi: Elite Publishing House Pvt. Ltd.
- **Srilakshmi B. 9th Edition** (2023). *Dietetics*. New Age Publishers. ISBN 13: 9789395161848

UNIT III

This unit discusses the nutritional requirements and dietary considerations during adulthood, pregnancy, lactation, and old age. It highlights physiological changes, specific nutrient needs, common nutritional concerns, and appropriate food choices to promote health and well-being across these stages of life.

- **Chadha, R., & Mathur, P.** (2015). *Nutrition: A life cycle approach*. Delhi: Orient Blackswan.
- **Indian Council of Medical Research, & National Institute of Nutrition.** (2020). *Nutrient requirements for Indians: Recommended dietary allowances and estimated average requirements – 2020*. ICMR–National Institute of Nutrition.
- **Longvah, T., Anantan, I., Bhaskarachary, K., Venkaiah, K., & Longvah, T.** (2017). *Indian food composition tables* (pp. 2-58). Hyderabad: National Institute of Nutrition, Indian Council of Medical Research.
- **Sethi, P., & Lakra, P.** (2015). *Aahar Vigyan, Poshan Evam Suraksha*. Delhi: Elite Publishing House Pvt. Ltd.
- **Srilakshmi B. 9th Edition** (2023). *Dietetics*. New Age Publishers. ISBN 13: 9789395161848

UNIT IV

This unit introduces the fundamental concepts of food safety and its importance in protecting public health. It explains key terms related to food safety, factors affecting food safety and the principles of hygiene and sanitation. The unit also covers system-based approaches including HACCP and General Principles of Hygiene (GHP). It introduces the role of Food Safety and Standards Authority of India as a surveillance body.

- **Jha, P., & Singh, A. K.** (2025). Regulatory compliance and food safety standards. In *Engineering solutions for sustainable food and dairy production: innovations and techniques in food processing and dairy engineering* (pp. 463-487). Cham: Springer Nature Switzerland.
- **Mathur, P.** (2018). *Food Safety and Quality Control*. Delhi: Orient Blackswan.
- **Suri, S. & Malhotra, A.** (2014). *Food Science Nutrition and Safety*. Delhi: Pearson India Ltd.

Suggested Readings

- **Edelstein, S., & Sharlin, J. (Eds).** (2009). *Life cycle nutrition– an evidence-based approach* Burlington, MA: Jones and Barlett Publishers.
- **Haritwal, S.** (2025). *Food Safety Certification: Importance, Standards, and Global Implications*. Standards, and Global Implications.
- **Khanna, K. et al.** (2013). *Textbook of nutrition and dietetics*. Delhi: Elite Publishing house (P) Ltd.
- **Shubhangini, A., & Joshi, S.** (2021). *Nutrition and Dietetics* (5th ed.). McGraw Hill Education (India) Private Limited. ISBN: 978-93-90727-82-7.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.