

**B.A (Prog.) with Nutrition and Health Education (NHE) as Non-Major
Category-III**

**DISCIPLINE SPECIFIC CORE COURSE
DSC-12-NHE: Preventive and Promotive Nutrition**

Course Title and Code	Credits	Credit distribution of the course			Eligibility Criteria	Prerequisite of the course
		Lecture	Tutorial	Practical/ Practice		
Preventive and Promotive Nutrition	4	3	0	1	XII Pass	NIL

Learning Objectives

- To make students aware about the prevalence of chronic diseases and correlate it with food consumption pattern
- To explain the role of nutraceuticals and functional foods in prevention of chronic diseases and promotion of good health
- To familiarize with types of dietary supplements and their health benefits

Learning Outcomes

After completion of the course, the students will be able to:

- Understand the relation between food consumption pattern and prevalence of chronic disease
- Describe the types and health benefits of nutraceuticals and functional foods
- Gain knowledge about the types, health benefits and adverse effects of dietary supplements

SYLLABUS OF DSC-NHE-12

**THEORY
(Credits 3; Hours 45)**

UNIT I: Relation between Diet, Nutrition and Prevalence of Disease 7 Hours

This unit will familiarize the students with the correlation of chronic diseases and food consumption pattern.

- Global burden of chronic diseases
- Food consumption patterns and trends
- Oxidative stress and free radicals-Basic concept, mechanism of free radical formation, biological effects of free radicals

UNIT II: Nutraceuticals and their Role in Prevention of Diseases and Promotion of Health 15 Hours

This unit will introduce definition, classification and health benefits of nutraceuticals.

- Definition of nutraceuticals

- Classification of nutraceuticals on the basis of chemical structure and their health benefits
 - Phytochemicals- isoprenoids, polyphenolics, phytosterols
 - Carbohydrates and their derivatives
 - Lipids- conjugated linoleic acid, omega-3 fatty acids
 - Proteins and peptides
 - Vitamins
 - Minerals
 - Microbial
- FSSAI regulations of nutraceuticals

UNIT III: Functional Foods and their Role in Prevention of Diseases and Promotion of Health
15 Hours

This unit will introduce definition, types and health benefits of various functional foods.

- Definition of functional foods
- Types of functional foods and their health benefits
 - Cereal and cereal products
 - Milk and milk products
 - Egg
 - Oils
 - Meat and meat products
 - Herbs and spices
 - Fruits and vegetables
 - Beverages (tea, wine)
 - Fermented foods

UNIT IV: Dietary Supplements **8 Hours**

This unit will introduce definition, types, benefits and safety issues of dietary supplements.

- Definition of dietary supplements
- Types of dietary supplements- vitamins, minerals, protein and amino acids, essential fatty acids, natural products
- Benefits and safety issues

PRACTICAL
(Credit 1; 30 Hours)

5. Survey of available nutraceuticals/dietary supplement in the market.
6. Survey regarding the awareness of availability and health benefits of dietary supplements among college going students and high fat, salt or sugar foods (HFSS).
7. Design a label for nutraceutical food/dietary supplement
8. Development of teaching aids for creating awareness of preventive and promotive nutrition

ESSENTIAL/RECOMMENDED READINGS

- Bagchi, D., Preuss, H. G., & Swaroop, A. (Eds.). (2015). *Nutraceuticals and functional foods in human health and disease prevention*. CRC Press.
- Wildman, R. E. and Bruno, R.S. (2021). *Handbook of nutraceuticals and functional foods*. (3rd edn.). CRC press.
- Food safety and Standards Authority of India, Government of India https://www.fssai.gov.in/upload/uploadfiles/files/Compendium_Nutra_29_09_2021.pdf (Accessed on 10 March 2023).
- World Health Organization. (2003). *Diet, nutrition, and the prevention of chronic diseases: report of a joint WHO/FAO expert consultation* (Vol. 916).

SUGGESTED READINGS

- Egbuna, C., & Dable-Tupas, G. (2020). Functional foods and nutraceuticals. *Springer Nature, 1*, 1-632.
- Mahan, L. K., & Raymond, J. L. (2016). *Krause's Food & the nutrition care process, Iranian Edition E-Book*. Elsevier Health Sciences.
- Rani, V., & Yadav, U. C. (Eds.). (2018). *Functional food and human health*. Springer.
- Noomhorm, A., Ahmad, I., & Anal, A. K. (Eds.). (2014). *Functional foods and dietary supplements: processing effects and health benefits*. John Wiley & Sons.

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