

20FT014 - NUTRACEUTICALS AND FUNCTIONAL FOOD

Hours Per Week : Total Hours :

L	T	P	C
3	1	-	4

L	T	P
45	15	-

WA/RA	SSH/HSB	CS	SA	S	BS
15	30	-	5	5	-

Course Description and Objectives:

This course deals with the functional foods and nutraceuticals (FFN) products and their bio availability and health benefits. The objective of the course is to impart knowledge to students on basics of functional foods and nutraceuticals, their significance, regulatory standards and role in disease prevention.

Course Outcomes:

Upon successful completion of this course student should be able to:

- define functional foods and nutraceuticals
- understand the chemistry and physiological effects of FFN
- understand the role of selected FFN in health promotion and disease prevention and treatment
- discuss the regulations with respect to functional foods and Nutraceuticals

SKILLS:

- ✓ able to identify the bioactivities of the main functional ingredients and their health benefits, sources and safety issues
- ✓ proficiency in formulation, delivery and regulatory compliance related to FFN products

UNIT - I

Introduction to nutraceuticals and functional foods: definitions, synonymous terms, basis of claims for a compound as a nutraceutical, Difference between nutraceuticals and functional foods; Regulatory issues for nutraceuticals including CODEX.

UNIT - II

Concept of angiogenesis and the role of nutraceuticals/functional foods; Nutraceuticals for cardiovascular diseases, cancer, diabetes, cholesterol management, obesity, joint pain, immune enhancement, age related macular degeneration, endurance performance and mood disorders.

UNIT - III

Nutraceuticals & Functional compounds: mechanisms of action, dosage levels, if any etc. Adverse effects and toxicity of Nutraceuticals.

UNIT - IV

Manufacturing aspects of selected nutraceuticals such as lycopene, isoflavonoids, prebiotics and probiotics, glucosamine, phytosterols etc.; Formulation of functional foods, Nutraceuticals: stability and analytical issues, labelling issues.

UNIT - V

Clinical testing of nutraceuticals and health foods; Interactions of prescription drugs and nutraceuticals. nutrigenomics – an introduction and its relation to nutraceuticals.

ACTIVITY:

- o Isolation of lycopene from tomato and its incorporation in beverages
- o To study processing, health effects and stability of various bioactive components in wheatgrass juice

TEXT BOOKS:

1. Brigelius-Flohé, J & Joost HG. 2006. Nutritional Genomics: Impact on Health and Disease. Wiley VCH.
2. Cupp J & Tracy TS. 2003. Dietary Supplements: Toxicology and Clinical Pharmacology. Humana Press.
3. Gibson GR & William CM. 2000. Functional Foods - Concept to Product.
4. Losso JN. 2007. Angi-angiogenic Functional and Medicinal Foods. CRC Press.

REFERENCE BOOKS:

1. Neeser JR & German BJ. 2004. Bioprocesses and Biotechnology for Nutraceuticals. Chapman & Hall.
2. Robert EC. 2006. Handbook of Nutraceuticals and Functional Foods. 2nd Ed. Wildman.
3. Shi J.(Ed) 2006. Functional Food Ingredients and Nutraceuticals: Processing Technologies.. CRC