



# AMITY UNIVERSITY

— UTAR PRADESH —

L	T	P/S	SW/ FW	TOTAL CREDIT UNITS
3	-	-	-	03

**Course Title: FUNCTIONAL FOODS & NUTRACEUTICALS**

**Course Code:**

**Credit Units: 03**

**Course Objectives:**

The objective of this course is to familiarize the students with the field of functional foods and nutraceuticals. Students will have the knowledge about the functional components of the food and regulatory framework required for regulatory approval of functional foods and Nutraceuticals. This course is designed to evaluate examples of scientific evidence supporting value-added functional foods or nutraceutical supplementation for chronic disease prevention.

**Pre-requisites:** Knowledge of nutrition in health problems

**Student Learning Outcomes:**

On completion of the course the student will be able to:

- differentiate between different classes of Nutraceuticals
- explain regulatory aspects of nutraceuticals and functional foods
- apply the knowledge of nutraceuticals and functional foods in food industries.

**Pedagogy for Course Delivery:**

The course pedagogy will include lectures, discussion on applications of the topics covered.

**Course Contents/Syllabus:**

	Weightage (%)
<b>Module I: Introduction to Functional foods and Nutraceuticals</b>	20%
<ul style="list-style-type: none"><li>• Introduction to nutraceuticals and functional food</li><li>• basis of claims for a compound as a nutraceuticals</li><li>• regulatory aspects for nutraceuticals / functional foods including CODEX</li><li>• nutraceuticals bridging gap between food and drug</li></ul>	

<ul style="list-style-type: none"> <li>• Important definitions associated with the nutraceutical and functional food industry.</li> </ul>	
<b>Module II Role of functional foods in Health</b>	<b>20%</b>
<ul style="list-style-type: none"> <li>• Role of nutraceuticals/functional foods in management of health and disease</li> <li>• Nutraceuticals for <ul style="list-style-type: none"> <li>➤ cardiovascular diseases, hypertension</li> <li>➤ cancer, diabetes,</li> <li>➤ cholesterol management,</li> <li>➤ obesity,</li> <li>➤ joint pain,</li> <li>➤ immune enhancement,</li> <li>➤ age-related macular degeneration</li> <li>➤ mood disorders..</li> </ul> </li> </ul>	
<b>Module III: Functional properties of Nutraceuticals</b>	<b>25%</b>
Properties and functions of various nutraceuticals such as <ul style="list-style-type: none"> <li>➤ lycopene,</li> <li>➤ isoflavonoids,</li> <li>➤ prebiotics and probiotics,</li> <li>➤ glucosamine,</li> <li>➤ phytosterols,</li> <li>➤ free radicals,</li> <li>➤ mushroom extracts,</li> <li>➤ concept of antioxidants.</li> </ul>	
<b>Module IV: Recent Advancements in Functional Foods</b>	<b>35%</b>
<ul style="list-style-type: none"> <li>➤ Adverse effects and toxicity of nutraceuticals;</li> <li>➤ nutrigenomics,</li> <li>➤ recent advancements and techniques in the formulation and processing of functional foods..</li> </ul>	

**Assessment/ Examination Scheme:**

Theory L/T (%)	Lab/Practical/Studio (%)	End Term Examination(%)
100	0	100

**Assessment/ Examination Scheme:**

Theory Assessment	Continuous Assessment/ Internal Assessment				End Term Examination		Total
	CT	S/V/Q	HA	A	EE		
Weightage (%)	10	08	07	05	70		100

*Abbreviations:*

*CT – Class Test, S- Seminar, V- Viva, Q- Quiz, HA- Home Assignment, TT- Total Theory*

**Text & Références:**

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. Goldberg I. 1994. Functional Foods: Designer Foods, Pharma Foods.
5. Losso JN. 2007. Anti-angiogenic Functional and Medicinal Foods. CRC Press.
6. Manson P. 2001. Dietary Supplements. 2nd Ed. Pharmaceutical Press.
7. Campbell JE & Summers JL. 2004. Dietary Supplement Labeling Compliance.
8. Neeser JR & German BJ. 2004. Bioprocesses and Biotechnology for Nutraceuticals. Chapman & Hall.
9. Robert EC. 2006. Handbook of Nutraceuticals and Functional Foods. 2nd Ed. Wildman.
10. Shi J. (Ed.). 2006. Functional Food Ingredients and Nutraceuticals: Processing Technologies. CRC Press.
11. Webb GP. 2006. Dietary Supplements and Functional Foods. Blackwell Publ