



(Master of Science –Home Science) (General Home Science)  
(M.Sc.-H.Sc.) (General Home Science) Semester (II)

Course Code	PH02CGEN53	Title of the Course	Food Science
Total Credits of the Course	04	Hours per Week	04

Course Objectives:	<ol style="list-style-type: none"><li>1. To provide understanding of composition of various food groups.</li><li>2. To enable the students to understand the changes that occurs during cooking and processing in various food products.</li><li>3. To gain knowledge related to food preservation</li><li>4. To gain knowledge regarding different types of food adulteration and their detection methods.</li></ol>
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Course Content		
Unit	Description	Weightage* (%)
1.	Introduction to Food Science: (a) Definition of food, food groups, classification and characteristics (b) Concept of food science (c) Basics of solutions, emulsions and stabilizers	10
2.	(a) Carbohydrates: classes, changes during cooking, gelatinization, caramalization, maillard reaction, applications in food industry (b) Proteins: Physico-chemical properties of protein, gel formation, effect of heat treatment, types of proteins like plant proteins, milk protein, egg protein etc.	15
3.	(a) Lipids: Physico-chemical properties of fat, flavor changes, hydrogenation, shortening, application in food preparation (b) Water: Bound water, unbound water, water activity	15
4.	(a) Food adulteration: Concept of food adulteration, different types of adulterants in food commodities, test of detection of various adulterants, effect of food adulteration on human health (b) Sensory evaluation of foods: factors affecting acceptability of foods, Selection of test panel, different types of tests for sensory evaluation.	15





5.	Food preservation: Concept, Principles, Importance, Preservation by low temperature, Preservation by high temperature, Preservation by radiation, Preservation by chemicals	15
6.	Composition, nutritional value and processing or preservation, convenience products of the various food commodities: (a) Cereals and legumes (b) Eggs, meat, milk and milk products (c) Fruits and vegetables (d) Sugar and its products (e) Oilseeds and nuts (f) Spices and condiments	30

Teaching-Learning Methodology	Classroom lectures (Blackboard/Power Point Presentations), Group Discussion, Discussion on recent updates with related examples
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Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Written Examination (As per CBCS R.6.8.3)	15%
2.	Internal Continuous Assessment in the form of Quizzes, Seminars, Assignments, Attendance (As per CBCS R.6.8.3)	15%
3.	University Examination	70%

Course Outcomes: Having completed this course, the learner will be able to	
1.	Apply knowledge of various changes occurring during cooking and processing in various food products
2.	Gain the knowledge about principles and importance of techniques in food preservation
3.	Describe composition and nutritional value of various food commodities

Suggested References:	
Sr. No.	References





1.	Srilakshmi, B. (2003). <i>Food science</i> . New Age International (P) Limited. <i>Publisher, New Delhi</i> .
2.	Mudambi, S.R., Rao, S.M. & Rajagopal, M. V. (2006). <i>Food science</i> . New Age International (P) Limited, Publishers.
3.	Frazier, W. C. (2014). <i>Food microbiology</i> . (5 <sup>th</sup> ed.). McGraw-Hill Education
4.	Sukumar, D. (2002). <i>Outline of dairy technology</i> . Oxford University Press.
5.	Roday, S. (1998). <i>Food hygiene and sanitation</i> . Tata McGraw-Hill Education.
6.	Fellows, P. J. (2002). <i>Food processing technology- Principles and Practices</i> . Woodhead Publishing Ltd.
On-line resources to be used if available as reference material	
On-line Resources	
Nutrition and Food Science. Bentham Science	
Food Science and Nutrition. Wiley Blackwell Publishing	
Journal of Food Science. Wiley Blackwell Publishing	
<a href="https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=827">https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=827</a>	
<a href="https://www.fssai.gov.in/">https://www.fssai.gov.in/</a>	

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**SARDAR PATEL UNIVERSITY**  
**Vallabh Vidyanagar, Gujarat**  
**(Reaccredited with 'A' Grade by NAAC (CGPA 3.25))**  
**Syllabus with effect from the Academic Year 2021-2022**

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