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**FOUR YEAR UNDER GRADUATE PROGRAM (2024-28)**  
**FACULTY OF Home Science**  
**COURSE CURRICULUM**

<b>PART-A: Introduction</b>			
<b>Program: Bachelor in Home Science (Honors and Research)</b>			<b>Semester-VII</b>
			<b>Session: 2024-2025</b>
1	<b>CourseCode</b>	<b>HSSE-05T</b>	
2	<b>CourseTitle</b>	<b>FOOD SCIENCE</b>	
3	<b>CourseType</b>	<b>DSE ( Discipline Specific Elective)</b>	
4	<b>Pre-requisite(if, any)</b>	<b>As per program</b>	
5	<b>CourseLearning Outcomes(CLO)</b>	<b>At the end of this course, the students will be enable to:</b> <ul style="list-style-type: none"> <li>• Understand basic knowledge of Food Science.</li> <li>• Apply Basic knowledge of food processing.</li> <li>• Expalin Basic knowledge of leavening agents.</li> <li>• Analyze basic knowledge of gelatinization.</li> <li>• Access Basic Knowledge of Cereals &amp; Products.</li> </ul>	
6	<b>CreditValue</b>	<b>3 Credits</b>	<b>1 Credit=15 Hours-learning &amp; Observation</b>
7	<b>TotalMarks</b>	<b>Max.Marks: 100</b>	<b>Min Passing Marks: 40</b>

<b>PART-B: Content of the Course</b>		
<b>Total No.of Teaching-learning Periods (01Hr. per period)-45 Periods (45 Hours)</b>		
Unit	Topics(Coursecontents)	No.of Period
<b>I</b>	<b>Introduction to food Science -</b> Evolution of the food industry and Allied industries Development of food science as a discipline. <b>Polysaccharides, Sugar and Sweeteners-</b> <b>Starch:</b> Structure, composition gelatinization. Methods for gelatinization. Changes. Characteristics of some food starches. Effects of ingredients and conditions on gelatinization. Modified food starches. <b>Sugars and sweeteners-</b> sugar syrups, sugar products Structural relationships to sweetness and crystallization.	<b>12</b>
<b>II</b>	<b>Cereals and Cereal Products-</b> <b>Cereal grains -</b> structure and composition, Cereal products, flour and flour quality, Extruded foods. Wheat germ, Bulgur, puffed and flaked cereals. <b>Fats, Oils and Related Products-</b> Sources. Composition effect of composition on fat properties. Functional	<b>11</b>

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	properties of fat and uses in food preparation. Fat substitutes. Fat deterioration and antioxidants.	
III	<p><b>Milk and milk products</b> Composition, physical and functional properties</p> <p><b>Dairy products-</b> cultured milk, Yogurt, butter, whey, cheese. Frozen desserts dairyproductssubstitutes.</p> <p><b>Eggs -</b> Structure and composition. Changes during storage. Functional properties. Egg use in cookery Egg processing.</p>	11
IV	<p><b>Fruits and vegetables -</b> composition.. Enzymes in fruits and vegetables. Plant Pigments.. Texture of Fruit and vegetables. Effects of storage processing and preservation</p> <p><b>Leavened Products: Leavening agents.</b> Biologically leavened and chemically leavened products. Batters and dough.</p>	11
Keywords	Sweeteners, cereals product , milk and milk products, Leavening process.	

**PART-C: Learning Resources**

**Text books , Reference Books and others**

**Text books Recommended**

- Introductory Foods- Hughes, O.Behnion, M. 5th Edition MacMillan Company.
- Nutrition and Diet Therapy - Williams, S.R., 4th Edition, C.V. Mosby Publishing Company. 7. Food Science - B. Shrilaxmi, 7th Edition, New Age International Publisher.
- Nutrition & Diet Therapy- Sue Rodwell Williams, 6th Edition, Times Mirror/Mosby College Publishing.
- Foods, Facts and Principles- N Shakuntala Manay, M Shadabaksharaswamy, 3rd Edition Published by New Age International Publisher.
- Food Science and Application in Indian Cookery - Usha Chandrasekhar, 2002 Edition, Phoenix Publishing House P. Ltd..

**OnlineResources-**

- <https://youtu.be/t1VjMVDDMOw?si=wLwO6-Hn7khI-YD->
- <https://youtu.be/iVa6DFUr0L4?si=yR5oNi5-zGhHbPfk>
- <https://youtu.be/rXccRQLw7mg?si=XhjyaXVnBZoxHyJ->
- <https://youtu.be/21L3LABPqZg?si=UvfzRGMtcSOuODQ7>
- <https://youtu.be/EwUtloIBam0?si=Byu-vHp3X2M8Wzy>
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<b>PART D:Assessment and Evaluation</b>		
<b>Suggested Continuous Evaluation Methods:</b>		
<b>Maximum Marks: 100 marks</b>		
<b>Continuous Comprehensive Evaluation(CCE): 30 Marks</b>		
<b>Semester End Exam (SEE):70 Marks</b>		
<b>Internal Assessment:</b> Continuous Internal Assessment ( CIA)	Internal Test / Quiz(2) –20+20 Assignment/Seminar – 10 Total Marks–30	Better marks out of the two tests/ Quiz + Obtained marks in assignment shall be considered against 30 Marks
<b>End Semester Exam (ESE):</b>	<b>Two section – A &amp; B</b> Section A: Q1. Objective – 10 x1= 10 Mark; Q2. Short answer type- 5x4 =20Marks Section B: Descriptive answer type qts.,1 out of 2 from each unit-4x10=40 Marks	

*Name and Signature of Convener & Members of CBOS:*

Bachelor in Home Science (FYUP)


  
 A. Sehgal, J. M., B. S., S. K., S. P., A. S., A. S.

## FOUR YEAR UNDER GRADUATE PROGRAM (2024-28) FACULTY OF Home Science COURSE CURRICULUM

PART-A: Introduction			
Program: Bachelor in Home Science (Honors and Honors with Research )		Semester-VII	Session:2024-2025
1	CourseCode	HSSE-05P	
2	CourseTitle	FOOD SCIENCE (Practical)	
3	CourseType	DSE-( Discipline Specific Elective)	
4	Pre-requisite(if, any)	As per program	
5	Course Learning Outcomes(CLO)	<p><b>At the end of this course, the students will be enable to:</b></p> <ul style="list-style-type: none"> <li>Understand basic knowledge of Food Science.</li> <li>Apply Basic knowledge of food processing.</li> <li>Expalin Basic knowledge of leavening agents.</li> <li>Analyze basic knowledge of gelatinization.</li> <li>Access Basic Knowledge of Cereals &amp; Products.</li> </ul>	
6	CreditValue	<b>1 Credit</b>	<i>1 Credit = 30 Hrs for laboratory or Fieldwork/ Training</i>
7	TotalMarks	<b>Max.Marks: 50</b>	<b>Min Passing Marks: 20</b>

PART B: Content of the Course		No. of Periods
Total No. of Learning- Training/ Performance Periods : 30 Periods ( 30 Hours)		
Module	Topics (Course Contents)-	
Lab Field Training/ Experiment contents of the course	<ul style="list-style-type: none"> <li>Effect of solutes on boiling point and freezing point of water.</li> <li>Effect of types of water on characteristics of cooked vegetables, pulses and cereals.</li> <li>Sugar and jaggery cookery: Relative sweetness, solubility and sizes of sugar, stages of sugar cookery, caramalization, and crystallization factors affecting crystal formation.</li> <li>Starches and cereals: Gluten formation and factors affecting gluten formation.</li> <li>jam and jellies Pectin content of fruits role of fats and oils in cooking as shortening agent frying medium factors affecting fat absorption, fat crystals, plasticity of fats, Permanent and semi permanent emulsions.</li> <li>Milk and milk products: Effect of acid salt, alkali sugar, heat</li> <li>Egg, structure assessing egg quality. Use of egg in cookery Emulsions air incorporation, thickening, binding gelling. Method</li> </ul>	30

	<p>of egg cookery and effect of eat. Egg white foams and factors affecting foams.</p> <ul style="list-style-type: none"> <li>• Pulses: Effect of various cooking and processing methods on various characteristics, functional properties of pulses and their products.</li> <li>• Meat and poultry: Methods affecting tenderness of meat effect of various methods of cooking and ingredients on colour, volume, texture, flavor aroma and water holding capacity.</li> <li>• Fish and seafood. Effect of different cooking methods on various fish and seafood.</li> <li>• Gelatin, gel strength and factors affecting gelation process. Ability to foam.</li> <li>• Fruits and vegetables Pigment -effects cooking imitations, pH Effect of various cooking processes on different characteristics of vegetables. Prevention of enzymatic browning.</li> <li>• Leavened Products: Fermentation use of micro organism (Lactic acid yeast) steam as an agent, eggs as an agent, Chemical agent.</li> <li>• Beverages: Factors affecting quality of beverages.</li> </ul>	
Key Words	Weights & Measures, Worshop, Local Nutrients, Traditional Recepies.	

**PART-C: Learning Resources**

**Text books , Reference Books and others**

**Text books Recommended**

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- Nutrition & Diet Therapy- Sue Rodwell Williams, 6th Edition, Times Mirror/Mosby College Publishing.
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- <https://youtu.be/iVa6DFUr0L4?si=yR5oNi5-zGhHbPfk>
- <https://youtu.be/rXccRQLw7mg?si=XhjyaXVnBZoxHyJ->
- <https://youtu.be/21L3LABPqZg?si=UvfzRGMtcSOuODQ7>

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- <https://youtu.be/EwUtlolBam0?si=Byu-vHp3X2M8WzyN>

### PART D :Assessment and Evaluation

#### Suggested Continuous Evaluation Methods:

Maximum Marks: 50 Marks

Continuous Comprehensive Evaluation (CCE): 15 Marks

End Semester Exam(ESE): 35 Marks

<b>Internal Assessment:</b> Continuous Internal Assessment (CIA) (By Course Teacher)	Internal Test / Quiz (2) - <b>10 &amp; 10</b> Assignment/Seminar+ Attendance - <b>05</b> Total Marks - <b>15</b>	Better marks out of the two tests/ Quiz + Obtained marks in Assignment shall be considered against <b>15</b> Marks
	<b>End Semester Exam(ESE):</b>	

Name and Signature of Convener & Members of CBoS:

A Sehgal  
 (Dr. Amrita Sehgal)

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