



### CIRCULAR

Ref. No.: GU/Acad –PG/BoS -NEP/2024/488 dated 04.09.2024

In supersession to the above referred Circular, the approved structure and syllabus for Semester I to VIII of the **Bachelor of Science in Home Science** Programme is attached.

The Dean/ Vice-Deans of the School of Biological Sciences and Biotechnology and Principals of affiliated Colleges offering the **Bachelor of Science in Home Science** Programme are requested to take note of the above and bring the contents of the Circular to the notice of all concerned.

(Ashwin V. Lawande)  
Deputy Registrar – Academic

To,

1. The Dean, School of Biological Sciences and Biotechnology, Goa University.
2. The Vice-Dean (Academic), School of Biological Sciences and Biotechnology, Goa University.
3. The Principals of Affiliated Colleges offering the Bachelor of Science in Home Science Programme

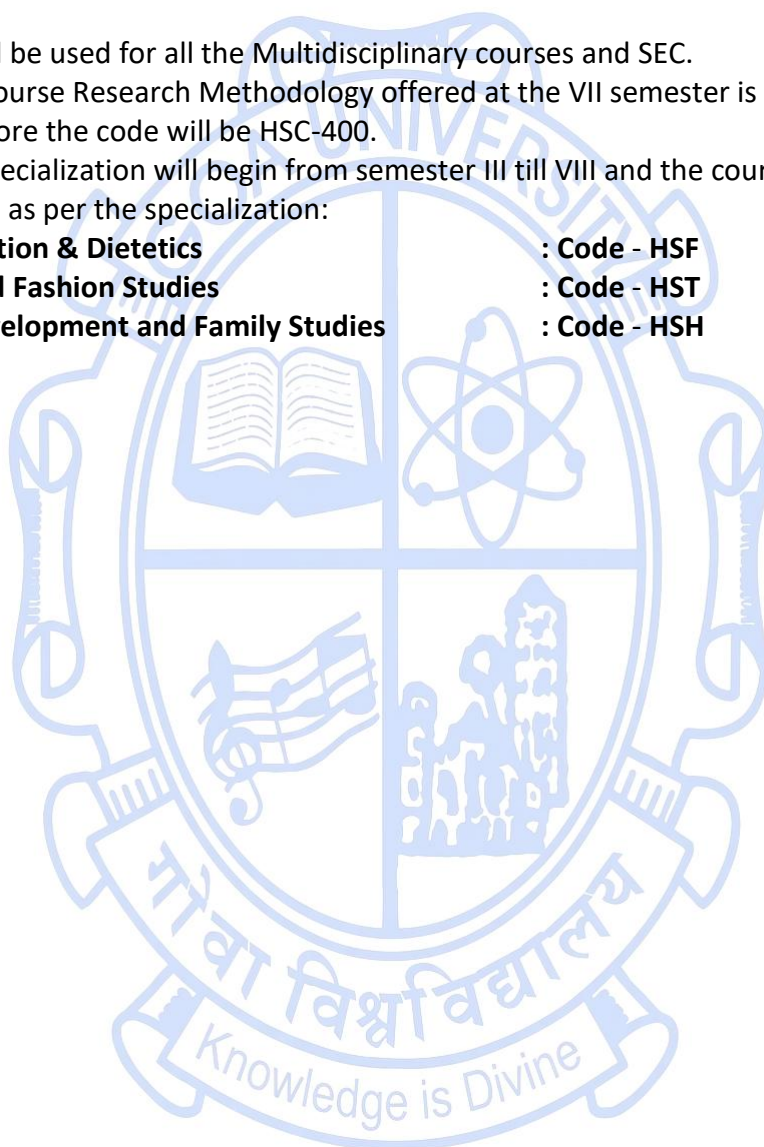
Copy to:

1. The Director, Directorate of Higher Education, Govt. of Goa
2. Chairperson, BoS in Home Science, Goa University.
3. Controller of Examinations, Goa University.
4. Assistant Registrar Examinations (UG), Goa University.
5. Directorate of Internal Quality Assurance, Goa University for uploading the Syllabus on the University website.

### **FIVE DISCIPLINES OF HOME SCIENCE:**

- FOOD NUTRITION AND DIETETICS
- TEXTILES AND FASHION STUDIES (Nomenclature changed from Textiles and Clothing to TEXTILES AND FASHION STUDIES)
- HUMAN DEVELOPMENT AND FAMILY STUDIES (Nomenclature changed from Human Development to Human Development and Family Studies)

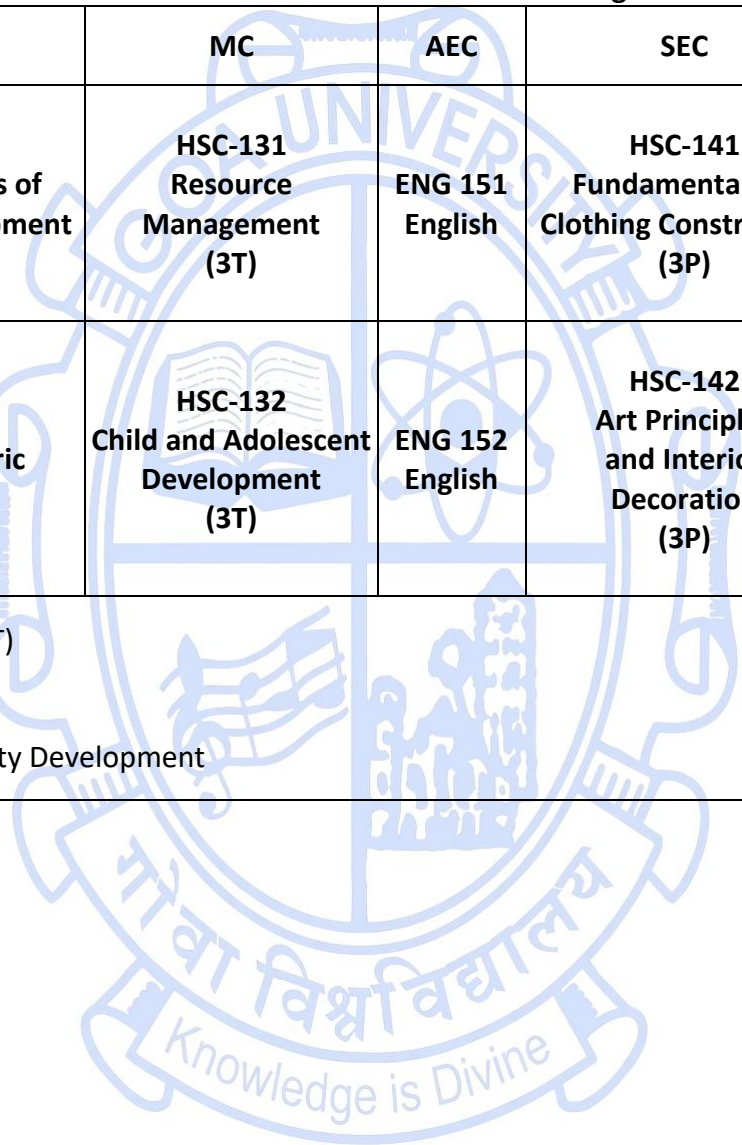
- Courses offered in the I and II semester will be from all the disciplines of Home Science and the codes will be HSC.
- The code HSC will be used for all the Multidisciplinary courses and SEC.
- The Major core course Research Methodology offered at the VII semester is a common course for all disciplines therefore the code will be HSC-400.
- Discipline wise specialization will begin from semester III till VIII and the course codes for Major core and Minor will be as per the specialization:
  1. **Food, Nutrition & Dietetics** : Code - HSF
  2. **Textiles and Fashion Studies** : Code - HST
  3. **Human Development and Family Studies** : Code - HSH



**Programme Structure for Semester I & II Under Graduate Programme- Home Science**

Semester	Major -Core	Minor	MC	AEC	SEC	I	D	VAC	Total Credits	Exit
I	<b>HSC-100 Food Science (3T+1P)</b>	<b>HSC-111 Fundamentals of Human Development (3T+1P)</b>	<b>HSC-131 Resource Management (3T)</b>	<b>ENG 151 English</b>	<b>HSC-141 Fundamentals of Clothing Construction (3P)</b>					
II	<b>HSC-101 Home Science Extension and Development (3T+1P)</b>	<b>HSC-112 Fibre to Fabric (3T+1P)</b>	<b>HSC-132 Child and Adolescent Development (3T)</b>	<b>ENG 152 English</b>	<b>HSC-142 Art Principles and Interior Decoration (3P)</b>					

EXIT WITH CERTIFICATE IN HOME SCIENCE (FOR EXIT)  
 VOCATIONAL SUMMER COURSES  
 Fundamentals of Computers  
 Workplace Readiness/ Professional Skills / Personality Development



**Programme Structure for Semester III to VIII Under Graduate Programme- Home Science: Food Nutrition and Dietetics**

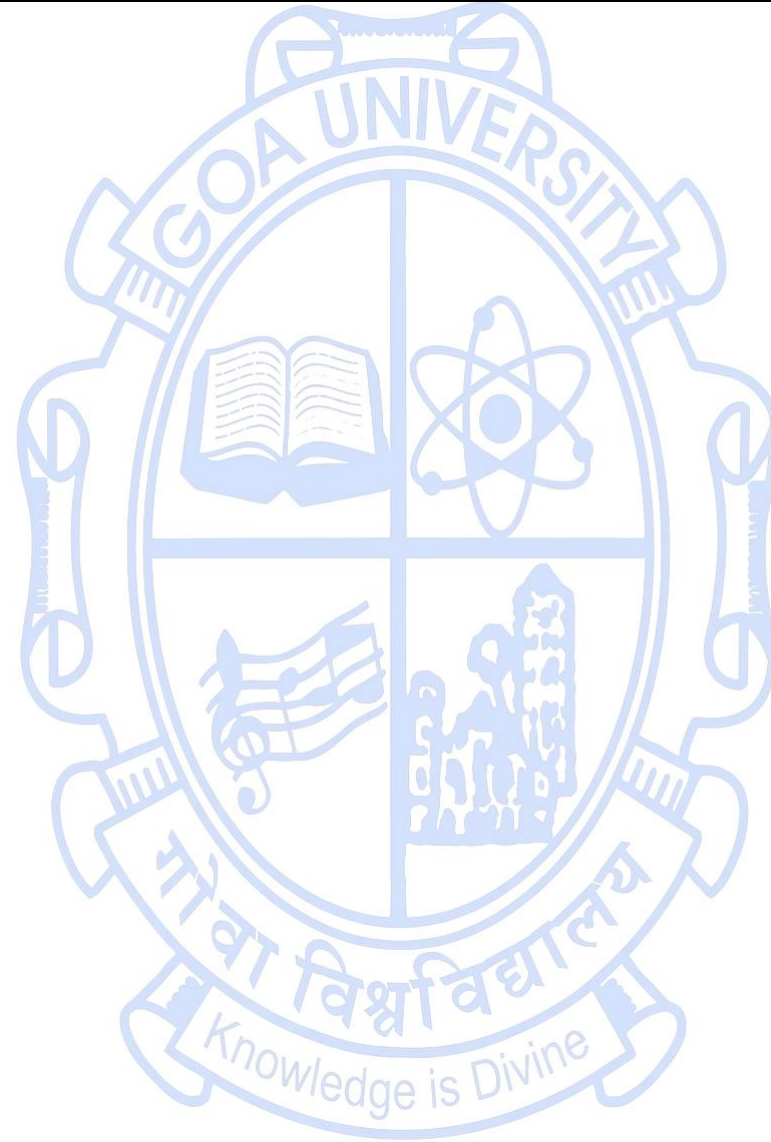
Semester	Major -Core	Minor	MC	AEC	SEC	I	D	VAC	Total Credits	Exit
III	<p align="center"><b>HSF-200</b> Nutrition Science (3T+1P)</p> <p align="center"><b>HSF-201</b> Food Microbiology (3T+1P)</p>	<p align="center"><b>HSF-211</b> Nutrition across the Lifespan (3T+1P)</p>	<p align="center"><b>HSC-231</b> Food Safety, Sanitation and Hygiene (3T)</p>	<p align="center">AEC (2)</p>	<p align="center"><b>HSC-241</b> Home Scale Food Processing &amp; Preservation (1T+2P)</p>				20	
IV	<p align="center"><b>HSF-202</b> Basic Dietetics (3T+1P)</p> <p align="center"><b>HSF-203</b> Nutrition and Physical Fitness (3T+1P)</p> <p align="center"><b>HSF-204</b> Nutritional Biochemistry (3T+1P)</p> <p align="center"><b>HSF-205</b> Nutrition Communication and Counselling (1T+1P)</p>	<p align="center"><b>HSF-221</b> Human Anatomy &amp; Physiology (3T+1P)</p> <p align="center">OR</p> <p align="center"><b>HSF-222</b> Food Product Development (3T+1P)</p>							20	(4)

V	<p><b>HSF-300</b> Medical Nutrition Therapy I (3T+1P)</p> <p><b>HSF-301</b> Advance Nutrition I (Macronutrients) (3T+1P)</p> <p><b>HSF-302</b> Public Health Nutrition (3T+1P)</p> <p><b>HSF-303</b> Food heritage of India (1T+1P)</p>	<p><b>HSF-321</b> Bakery Technology (2T+2P)</p>					2		20
VI	<p><b>HSF-304</b> Medical Nutrition Therapy II (3T+1P)</p> <p><b>HSF-305</b></p>	<p><b>HSF-322</b> Food Packaging (3T+1P)</p> <p>OR</p> <p><b>HSF-323</b></p>							20

	<p><b>Advance Nutrition II (Micronutrients) (3T+1P)</b></p> <p><b>HSF-306 Food Technology (3T+1P)</b></p> <p><b>HSF-307 PROJECT (4)</b></p>	<p><b>Fermented Food Technology (2T+2P)</b></p>							
VII	<p><b>HSC-400 Research Methodology (4T)</b></p> <p><b>HSF-401 Geriatric Nutrition (3T+1P)</b></p> <p><b>HSF-402 Nutraceuticals and Nutrigenomics (3T+1P)</b></p> <p><b>HSF-403 Advanced Physiological Biochemistry</b></p>	<p><b>HSF-411 Food Quality Analysis (2T+2P)</b></p> <p><b>OR</b></p> <p><b>HSF-412 Quantity Food Production (3T+1P)</b></p>						20	



	WITH Dissertation (12)								
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**Programme Structure for Semester III to VIII Under Graduate Programme- Home Science: Textiles and Fashion Studies**

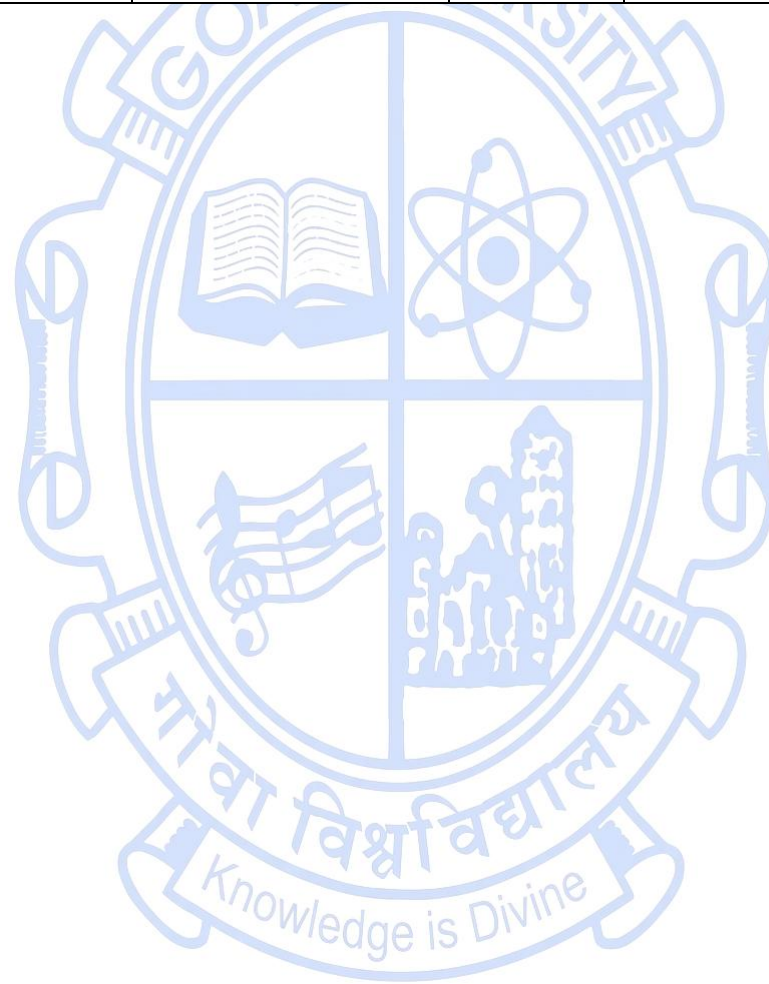
Semester	Major -Core	Minor	MC	AEC	SEC	I	D	VAC	Total Credits	Exit
III	<p align="center"><b>HST-200</b> Pattern Making and Styling for Kids wear (4P)</p> <p align="center"><b>HST-201</b> Psychology of Fashion (2T+2P)</p>	<p align="center"><b>HST-211</b> Eco and Sustainable Fashion (2T+2P)</p>	<p align="center"><b>HSC-232</b> Fashion Crafts/Accessories (3P)</p>	<p align="center">ENG 251 English/  KON 251Konkani/ HIN 251 Hindi (2)</p>	<p align="center"><b>HSC-242</b> Surface Enrichment (3P)</p>				20	
IV	<p align="center"><b>HST-202</b> Apparel Design and Illustration (2T+2P)</p> <p align="center"><b>HST-203</b> Dyeing, Printing and Finishing of Textiles (3T+1P)</p> <p align="center"><b>HST-204</b> Garment Construction for Kids wear (2T+2P)</p> <p align="center"><b>HST-205</b></p>	<p align="center"><b>HST-221</b> Product Development in Textiles &amp; Apparel (2T+2P)</p>							20	

	<b>Indian Textile heritage (2T)</b>									
<b>V</b>	<b>HST-300 Fabric Construction (3T+1P)</b>  <b>HST-301 Textile Testing and laundry science (3T+1P)</b>  <b>HST-302 Pattern Drafting and Draping (Basics) (2T+2P)</b>  <b>HST-303 CAD in Apparel Design (2P)</b>	<b>HST-321 Fashion Communication (2T+2P)</b>				<b>2</b>			<b>20</b>	
<b>VI</b>	<b>HST-304 Apparel Production (2T+2P)</b>  <b>HST-305 Traditional Costumes of India</b>	<b>HST-322 Quality Norms and standards for apparel (3T+1P)</b>							<b>20</b>	

	<p><b>(3T+1P)</b></p> <p><b>HST-306</b> <b>Apparel marketing</b> <b>and merchandising</b> <b>(3T+1P)</b></p> <p><b>OR</b></p> <p><b>HST-308</b> <b>Textile Design and</b> <b>Fashion Illustration</b> <b>(1T+3P)</b></p> <p><b>HSF-307</b> <b>PROJECT</b> <b>(4)</b></p>									
<b>VII</b>	<p><b>HSC-400</b> <b>Research</b> <b>Methodology</b> <b>(4T)</b></p> <p><b>HST-401</b> <b>Advanced Pattern</b> <b>Making</b> <b>(2T+2P)</b></p> <p><b>HST-402</b></p>	<p><b>HST-411</b> <b>Image styling</b> <b>(2T+2P)</b></p>							<b>20</b>	

	<p><b>Textile Industry &amp; Trade (3T+1P)</b></p> <p><b>HST-403 Fibre Chemistry (3T+1P)</b></p>									
VIII	<p><b>HST-404 Recent Advancements in Textiles, Clothing and Fashion (4T)</b></p> <p><b>HST-405 Fashion Journalism (2T+2P)</b></p> <p><b>HST-406 World Historic Textiles (3T+1P)</b></p> <p><b>HST-407 Quality Control for Textiles and Apparel, Fabric (3T+1P)</b></p>	<p><b>HST-412 Eco Fashion / Fashion Event Management (1+3)</b></p>					(12)		20	

	<b>OR</b> <b>ONE OF THE ABOVE</b> <b>WITH DISSERTATION</b>									
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**Programme Structure for Semester III to VIII Under Graduate Programme- Home Science: Human Development and Family Studies**

Semester	Major -Core	Minor	MC	AEC	SEC	I	D	VAC	Total Credits	Exit
III	<p align="center"><b>HSH-200 Development in Adolescence (3T+1P)</b></p> <p align="center"><b>HSH-201 Development in Adulthood (3T+1P)</b></p>	<p align="center"><b>HSH-211 Essentials of Psychology (3T+1P)</b></p>	<p align="center"><b>HSC-233 Basic Skills in Guidance &amp; Counselling (2T+1P)</b></p>	<p align="center">ENG 251 English/  KON 251Konkani/ HIN 251 Hindi (2)</p>	<p align="center"><b>HSC-243 Creative Teaching Aids &amp; Techniques (3P)</b></p>				20	
IV	<p align="center"><b>HSH-202 Marriage and Family Dynamics (3T+1P)</b></p> <p align="center"><b>HSH-203 Guidance &amp; Counselling (3T+1P)</b></p> <p align="center"><b>HSH-204 Social Psychology (3T+1P)</b></p> <p align="center"><b>HSH-205 Social Welfare (1T+1P)</b></p>	<p align="center"><b>HSH-221 Methods of Child Study (3T+1P)</b></p>							20	

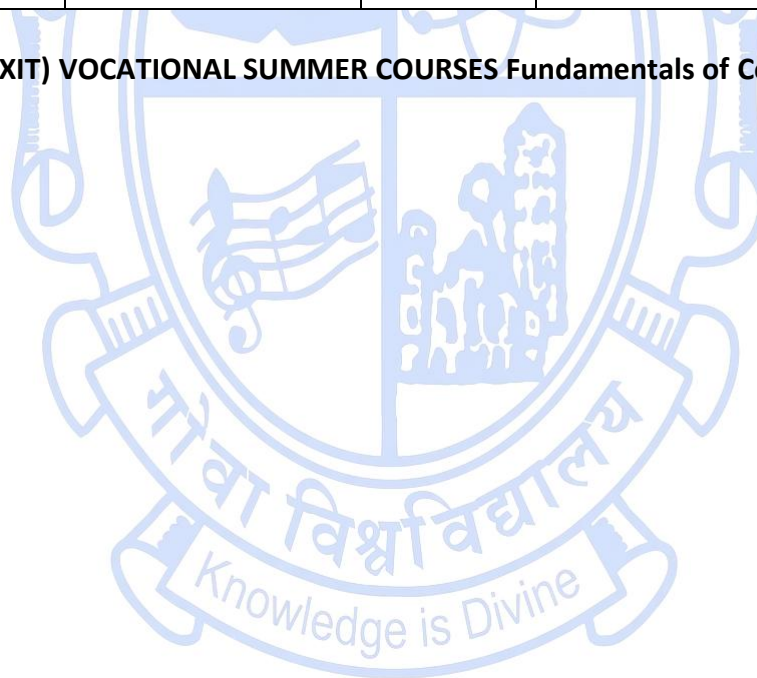
V	<p><b>HSH-300</b>  <b>Theoretical</b>  <b>Perspectives in</b>  <b>Human Development</b>  <b>– Part I</b>  <b>(3T+1P)</b></p> <p><b>HSH-301</b>  <b>Early Childhood Care</b>  <b>&amp; Education – Part I</b>  <b>(3T+1P)</b></p> <p><b>HSH-302</b>  <b>Education of the</b>  <b>Differently Abled –</b>  <b>Part I</b>  <b>(3T+1P)</b></p> <p><b>HSH 303</b>  <b>School</b>  <b>Administration</b>  <b>&amp;Management (2+0)</b></p>	<p><b>HSC-321</b>  <b>Practical in</b>  <b>Preschool Education</b>  <b>(4P)</b></p>					(2)		20	
VI	<p><b>HSH-304</b>  <b>Theoretical</b>  <b>Perspectives in</b></p>	<p><b>HSH-322</b>  <b>Creating</b>  <b>Developmentally</b>  <b>Appropriate</b></p>							20	

	<p><b>Human Development – Part II (3T+1P)</b></p> <p><b>HSH-305 Early Childhood Care &amp; Education – Part II (3T+1P)</b></p> <p><b>HSH-306 Education of the Differently-Abled – Part II (3T+1P)</b></p> <p><b>HSH-307 (Project)</b></p>	<p><b>Curriculum (3T+1P)</b></p>								
VII	<p><b>HSC-400 Research Methodology 4T+0P</b></p> <p><b>HSH-401 Advances in Theories of Human Development (3T+1P)</b></p>	<p><b>HSH-411 Behavioural and Emotional Challenges in Children (3T+1P)</b></p>							20	

	<p><b>HSH-402</b>  <b>Issues &amp; Trends in</b>  <b>Human Development</b>  <b>(3T+1P)</b></p> <p><b>HSH-403</b>  <b>Ethics in Research</b>  <b>and Human</b>  <b>Development</b>  <b>(3T+1P)</b></p>									
VIII	<p><b>HSH-404</b>  <b>Human Resource</b>  <b>Management</b>  <b>(3T+1P)</b></p> <p><b>HSH-405</b>  <b>Counselling and</b>  <b>Psychological Testing</b>  <b>(3T+1P)</b></p> <p><b>HSH-406</b>  <b>Advanced</b>  <b>Study of Theories of</b>  <b>Human</b>  <b>Behaviour and</b>  <b>Development</b>  <b>(3T+1P)</b></p>	<p><b>HSH-412</b>  <b>Media For</b>  <b>Human</b>  <b>Development</b>  <b>2T+2P</b></p>					<p><b>Dissertation</b>  <b>(12)</b></p>		<p><b>20</b></p>	

	<p><b>HS-407 Research Methods and Statistics (3T+1P)</b></p> <p><b>OR ONE OF THE ABOVE WITH DISSERTATION</b></p>									
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**EXIT WITH CERTIFICATE IN HOME SCIENCE (FOR EXIT) VOCATIONAL SUMMER COURSES Fundamentals of Computers Workplace Readiness/ Professional Skills / Personality Development**



**SEMESTER I****Name of the Programme : B.Sc. Home Science****Course Code : HSC-100****Title of the Course : Food Science****Number of Credits : 4 (3T+1P)****Effective from AY : 2023-24**

<b>Pre-requisites for the Course:</b>	Nil	
<b>Course Objectives:</b>	<ul style="list-style-type: none"> <li>To understand importance of food groups and nutritional composition</li> <li>To study advantages and disadvantages of cooking methods on the stability of nutrients</li> <li>To learn the composition of different foods, effect of processing and storage on nutritional composition of foods.</li> <li>To learn the factors influencing the cooking quality of different foods</li> </ul>	
<b>Content:</b>		<b>No of hours</b>
	<b>UNIT I. Introduction of Food Groups, Food Pyramid And Cooking Methods</b> Definition of Food and Food Science, Classification Of Foods based on Functions, Food groups and Food pyramid, Need For Grouping Foods Different Methods Of Cooking Moist Heat, Dry Heat And Fat As Medium Of Cooking-Definition, Merits And Demerits Of Different Methods Of Cooking. Microwave Cooking -Merits / Demerits of Various Methods Of Cooking. Recent Methods of Cooking-Ohmic Cooking, Induction Cooking	<b>8</b>
	<b>UNIT II Cereals, Pulses, Nuts and Oil Seeds, Fats and Oils</b> Structure, Composition and Nutritive Value, Changes in Nutritive Value during Cooking, Processing and storage, cooking quality Cereals- cereal cookery concepts – Gluten formation, Cereal starch – moist heat effect – Gelatinization, Gel formation, Retrogradation & Syneresis; Dry heat effect - Dextrinization , Pulses- wet milling and dry milling, germination, soaking and fermentation. Nuts and oil seeds- role of nuts and oil seeds in cookery, toxins in nuts and oil seeds Fats and oil seeds- types of oils, functions, effect of heat on oil absorption, rancidity	<b>15</b>
	<b>UNIT III Vegetables and Fruits</b> Classification, Composition and Nutritive Value, pigments, Changes in Nutritive Value and pigments of Vegetables during Cooking , Ripening of Fruits, Storage of vegetables and Fruits	<b>5</b>
	<b>UNIT IV Milk , Milk Products and Eggs</b> Milk - Composition, Nutritive Value, Problems Encountered in Cooking, Kinds of Milk, Types of Milk Products- Fermented and Non- fermented products. Egg- Structure, Composition and Nutritive Value, Methods of cooking, Factors affecting coagulation and foam formation, Testing freshness in Egg. Uses of Egg in Food Preparation and Storage of Eggs 1	<b>10</b>
	<b>Unit V Meat, Poultry and Fish</b> Structure, Composition, Nutritive Value, Selection, Methods of cooking and its effects on changes in nutritive value of Meat, Fish and Poultry. Factors Affecting Tenderness of Meat Storage of Meat, Fish and Poultry	<b>7</b>
	<b>PRACTICAL</b> Weights and measures; preparing market order and table setting Food preparations using different cooking methods, understanding the principle involved, nutritional quality and portion size for the following <b>Beverages:</b> Hot tea/coffee, milk shake/ lassi, fruit based beverages <b>Cereals:</b> Boiled rice, pulao, chapatti, parantha, puri, pastas	<b>30</b>

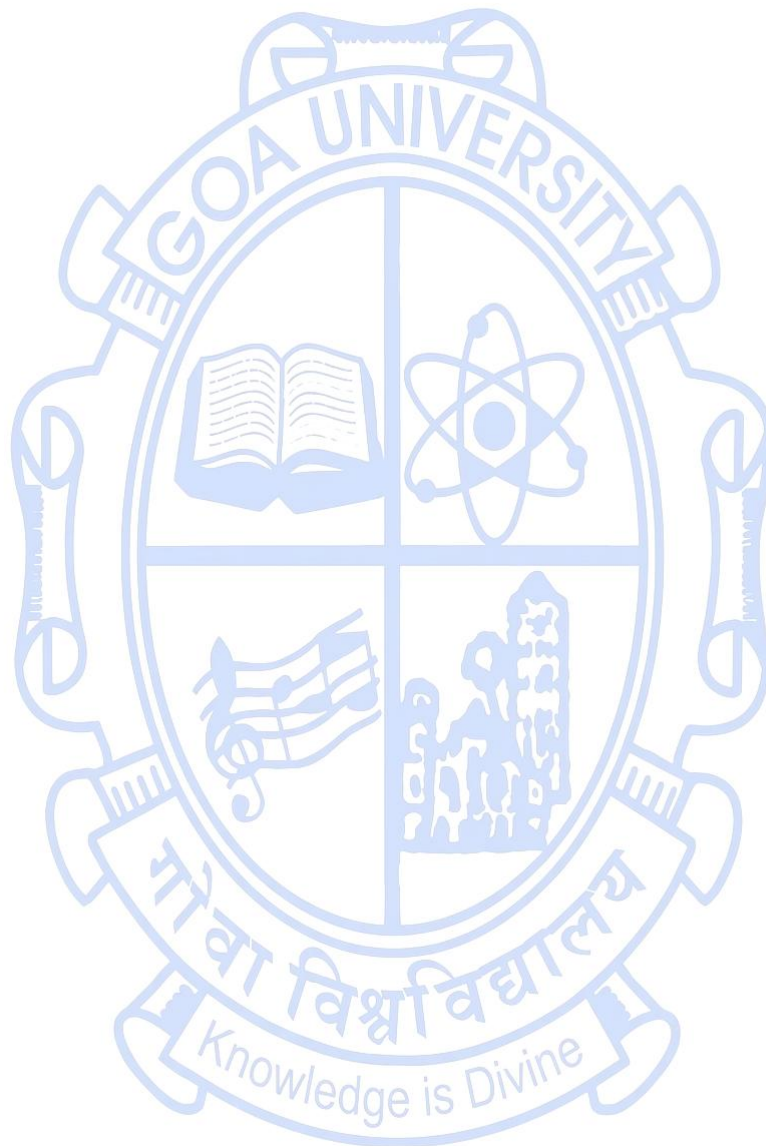
	<p><b>Pulses:</b> Whole, dehusked ( Different dishes using pulses and legumes)</p> <p><b>Vegetables:</b> Green leafy vegetables, coloured vegetables, roots tubers, curries, dry preparations and baked</p> <p><b>Milk and milk products</b></p> <p><b>Meat, Fish and poultry preparations</b></p> <p><b>Egg preparations:</b> Boiled, poached, fried, scrambled, omelettes, egg pudding</p> <p><b>Soups:</b> Broth, plain and cream soups</p> <p><b>Baked products:</b> Biscuits/cookies, cream cakes, sponge cake preparations, tarts and pies and any other</p> <p><b>Snacks:</b> pakoras, cutlets, samosas, upma, poha, sandwiches or any other snack</p> <p><b>Salads:</b> salads and salad dressings.</p> <p><b>Fermented products:</b> idli, dosa, appam, batura, kulcha, dhokla ( any other )</p>
<b>Pedagogy:</b>	Regular lectures, debates, ICT enabled learning experiences
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Potter, N. and Hotchkiss, J.H. Food Science, 5 th Ed., CBS Publications and Distributors, Daryaganji, New Delhi, 1998.</li> <li>2. Shakuntala Manay, Shadaksharaswamy. M (2000) Foods, Facts and Principles, New Age International Pvt Ltd Publishers, Sixth Edition, 2015.</li> <li>3. Usha Chandrasekhar, Food Science and Application in Indian Cookery, Phoenix Publishing House P. Ltd., New Delhi, 2002.</li> <li>4. Food Science Srilakshmi</li> </ol>
<b>Course Outcomes:</b>	<ol style="list-style-type: none"> <li>1. Knowledge on food groups, food pyramid and understand cooking methods with the application in balanced menu planning.</li> <li>2. Knowledge on nutritive value, understand the cookery concepts and gain skills to process and store cereals, pulses, nuts and oilseeds.</li> <li>3. Knowledge on nutritional classification, understand the changes in pigments and acquire skills in preserving nutrients and pigments in the processing and storage of vegetables and fruits.</li> <li>4. Knowledge on nutritive value, understand the cooking quality factors and develop skills in the preparation and storage of milk and egg products.</li> <li>5. Knowledge on the structure and nutritive value, understand the processing factors and acquire skills in processing and storage of flesh foods.</li> </ol>

**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSC-111  
**Title of the Course** : Fundamentals of Human Development  
**Number of Credits** : 4T  
**Effective from AY** : 2023-24

<b>Pre-requisites for the Course:</b>	Nil	
<b>Course Objectives:</b>	<ul style="list-style-type: none"> <li>To introduce students to the scientific study of the human lifespan and the principles of development.</li> <li>To orient students to the key features of physical, cognitive, language, social, emotional development in children, covering the period from conception to late childhood.</li> <li>To create an awareness of the various factors that influence the spheres of development.</li> </ul>	
<b>Content:</b>		<b>No of hours</b>
	<b>Unit I – History and Basic Concepts in the Field of Human Development</b> <ul style="list-style-type: none"> <li>Growth &amp; Development; Differences between these and importance</li> <li>History and Prospects in the field of Human Development</li> <li>Principles of Human Growth &amp; Development</li> </ul>	<b>5</b>
	<b>Unit II – Conception, Prenatal Development, Infancy and Childhood</b> <ul style="list-style-type: none"> <li>Conception, Stages of prenatal development and mother’s experience of pregnancy</li> <li>Teratology and hazards to prenatal development</li> <li>Prenatal care and Cultural beliefs about pregnancy</li> <li>Birth and the postpartum period (Process and complications, Physical, emotional, &amp; psychological adjustments in the postpartum period, Attachment &amp; Bonding)</li> <li>Early experience and the brain; development of the brain in childhood, Reflexes, gross motor skills, and fine motor skills</li> <li>Physical and motor development (Body growth and change in infancy, early childhood, middle and late childhood)</li> </ul>	<b>12</b>
	<b>Unit III – Cognitive and Language Development</b> <ul style="list-style-type: none"> <li>Cognitive Development (Characteristics of thought in infancy and childhood – Piaget &amp; Vygotsky’s theories; attention and memory, social cognition, intelligence and individual differences in intelligence)</li> <li>Language Development (Defining language, pattern of language development from birth to late childhood; Multilingualism – advantages and challenges; Parental, Familial, Environmental and other factors that facilitate Language Development)</li> </ul>	<b>12</b>
	<b>Unit IV – Social and Emotional Development in Childhood</b> <ul style="list-style-type: none"> <li>Theoretical Perspectives</li> <li>Social and emotional development in infancy (Attachment, stranger distress, separation anxiety)</li> <li>Temperament</li> <li>Social and emotional development in toddlerhood (Growth of sociability, Awareness of self and others, Parent-toddler relations)</li> <li>Social developmental changes in early childhood (Child’s expanding world, Self-control and self-management)</li> <li>Social development in middle and late childhood (Development of the self, Peer relations, Functions of play)</li> </ul>	<b>10</b>
	<b>Unit V – From Childhood to Adolescence</b>	

	<ul style="list-style-type: none"> <li>• Physical, cognitive, emotional, and social changes during the pre-pubescent years</li> <li>• Preparation for puberty and understanding pubertal changes</li> <li>• Role of parents and caregivers in sexuality education</li> <li>• Holistic preparation for adolescence: physical, emotional, social, and psychological aspects</li> <li>• Adolescence as a distinct stage of human development</li> <li>• Developmental tasks, opportunities, and challenges during adolescence</li> <li>• Transition from childhood to adulthood</li>   <li>• <b>Practical</b></li> <li>• Preparation of aids on journey of the baby in the womb</li> <li>• Birth plan, hospital list and baby-friendly hospital guidelines</li> <li>• Lamaze Exercises to Support Delivery</li> <li>• Breastfeeding positions and misconceptions</li> <li>• APGAR and reflexes diagrams</li> <li>• Traditional and contemporary methods of babywearing, diapering, weaning, etc.</li> <li>• Interview of a mother about her pregnancy and delivery</li> <li>• Presentation on developmental milestones of children/own.</li> <li>• Observation of motor activities of a toddler.</li> <li>• Experiment to test cognitive development in children</li> <li>• Collect resources to help parents prepare children for adolescence</li> </ul>	<b>6</b>
	<p><b>Practical</b></p> <ol style="list-style-type: none"> <li>1. Preparation of aids on journey of the baby in the womb</li> <li>2. Birth plan, hospital list and baby-friendly hospital guidelines</li> <li>3. Lamaze Exercises to Support Delivery</li> <li>4. Breastfeeding positions and misconceptions</li> <li>5. APGAR and reflexes diagrams</li> <li>6. Traditional and contemporary methods of babywearing, diapering, weaning, etc.</li> <li>7. Interview of a mother about her pregnancy and delivery</li> <li>8. Presentation on developmental milestones of children/own.</li> <li>9. Observation of motor activities of a toddler.</li> <li>10. Experiment to test cognitive development in children</li> </ol>	<b>30</b>
<b>Pedagogy:</b>	<ul style="list-style-type: none"> <li>• Powerpoint Presentations</li> <li>• Videos</li> <li>• Demonstrations</li> <li>• Interactive Activities (Role Play, Puzzles, Games, etc.)</li> <li>• Observation &amp; Report Writing</li> <li>• In-Class discussions &amp; debates</li> <li>• Samples of Storybook and Children's Toys</li> </ul>	
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Berk, L.E. (2017). <i>Child Development</i> (9th Ed.). USA: Pearson Education.</li> <li>2. Santrock, J. W. (2013). <i>Child development</i> (14<sup>th</sup> Ed.). NY: McGraw-Hill.</li> <li>3. Hurlock, E.B. (1978). <i>Child Development</i> (6<sup>th</sup> Ed). Singapore: McGraw-Hill Book Co.</li> <li>4. Craig, G. J. (1999). <i>Human Development</i>. NJ: Prentice-Hall, Inc.</li> </ol>	
<b>Course Outcomes:</b>	<p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Describe the difference between growth and development</li> <li>2. Justify the importance of studying human development</li> <li>3. Identify the factors affecting human development</li> <li>4. Explain the main developments and milestones in childhood</li> </ol>	

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|  | 5. Elaborate on all the major developments from infancy to late childhood in the areas of physical and motor development, cognition, language, and social and emotional growth. |
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**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSC-131  
**Title of the Course** : Family Resource Management Concepts & Contexts  
**Number of Credits** : 3T  
**Effective from AY** : 2023-24

<b>Pre-requisites for the Course:</b>	Nil	
<b>Course Objectives</b>	<ul style="list-style-type: none"> <li>• Learning to identify and manage the use of resources available for functional use</li> <li>• Comprehending the purpose of managing resources</li> <li>• Setting realistic goals and being practical and prudent in the use and management of limited resources by making intelligent decisions</li> <li>• Becoming money, time, and energy conscious in daily living</li> </ul>	
<b>Content</b>		<b>No of Hours</b>
	<b>Unit I Introduction to Resource Management in Family Settings</b> Introduction to home management- meaning, definitions, conceptual framework, need, and philosophy Concept, definition, universality and Scope of family resource management Approaches to resource management – family resources Vs home management Ethics in management of resources – essential qualities for success Motivating factors in management – Values, Standards, and Goals – meaning, types/ classification, and influences. Theories of Motivation- Maslow’s hierarchy of needs theory; human wants – nature and role in the management.	<b>10</b>
	<b>Unit II Resources</b> Concept, classification, and Characteristics of family resources Factors affecting utilization of family resources Maximizing use of Resources and resource conservation. Natural resources: renewable and non-renewable resources, methods of harnessing renewable resources for residential use.	<b>10</b>
	<b>Unit III Functions of Management: An Overview</b> Decision Making- the crux of management, Types of decisions; factors of control, the role of values, standards, and goals in the decision-making process Management process: Definitions and steps in the management process: Planning, Controlling, Organizing, and Evaluation Significance of managing resources of the family Relation of Family Resource Management to other areas of Home Science.	<b>10</b>
	<b>Unit IV Resource Management Process</b> Management process applicable to specific resources: Money- sources of income, meaning of income and expenditure, steps in money management Time – the concept of time schedule, time norms, and peak loads Energy – Types of effort (Manual, pedal, visual etc)., Concept of body posture, drudgery, and fatigue, fatiguing activities, classification of activities (sedentary, moderate, and heavy), use of labor-saving devices in the management of time and energy, methods of alleviating fatigue Principles of Work simplification, Mundel’s Classes of Change, time and motion studies, working heights at different levels.	<b>10</b>
	<b>Unit V Ergonomics: Role in Management of Human Resources</b> Ergonomics – concept and principles, work, worker and work environment relationship, the role of work, workplace and equipment (appliances) as sources of drudgery Occupational health hazards – sources, problems, and solutions	<b>5</b>

<b>Pedagogy</b>	Class tests, assignments, records, portfolio presentation, model making
<b>References/ Readings</b>	<ol style="list-style-type: none"> <li>1. Bharti, V.V.(1994). <i>Family Resource Management</i>. New Delhi Discovery Pub House. ISBN: 81-7141-250-5.</li> <li>2. Bharti,V.V. and Jacintha, M.(1994). <i>Family Resource Management-New Concepts and Theory</i>. New Delhi Discovery Pub House 45/94. ISBN: 81-7141-250-5.</li> <li>3. Deacon, R. (1988). <i>Family Resource Management</i>. Boston Allyn and Bacon 1988-Xii; 291p. ISBN:0-205-1138-6.</li> <li>4. Goldsmith, E. B. (2022). <i>Foundations of Family Resource Management</i>. United Kingdom: Taylor &amp; Francis Limited.</li> <li>5. Grandjean, E., and Kroemer, K.H.E. (1999). <i>Fitting the Task to the Human - A Text Book of Occupational Ergonomics</i>, New York: Taylor and Francis.</li> <li>6. Kaur,H. (1989). <i>Theory and Practice of Home Management</i>. Delhi Surjeet Publishers.</li> <li>7. Koontz, H., and O'Donnel C. (2005). <i>Management – A Systems and Contingency Analysis of Managerial Functions</i>. New York: McGraw-Hill Book Company</li> <li>8. Mann,MK. <i>Home Management for Indian Families</i>. New Delhi Kalyani Publishers 1982-X;140p.</li> <li>9. Nickell, P., and Dorsey, J, M. (2002). <i>Management in Family Living</i>. New Delhi: CBS Publishers (ISBN13: 9788123908519)</li> <li>10. Rao V.S.P., and Narayana P.S. (2008). <i>Principles and Practices of Management</i>. New Delhi: Konark Publishers Pvt. Ltd.( ISBN 13: 9788122000283)</li> <li>11. Singh, S. (2007). <i>Ergonomics Integration for Health and Productivity</i>. New Delhi/ Udaipur: Himanshu Publication</li> <li>12. Varghese, MA.(1989). <i>Home Management</i>. New Delhi Wiley Eastern Limited. ISBN:9780852269046, 0852269048.</li> <li>13. Asay, S. M., Moore, T. J. (2017). <i>Family Resource Management</i>. United States: SAGE Publications. ISBN:9781483383156.</li> <li>14. Gross.I.H., Crandall, E. W. and Knoll, M. M.(1980). <i>Management for Modern Families</i>. New Jersey: Prentice Hall Inc.</li> <li>15. Moore, T. J., Asay, S. M. (2021). <i>Family Resource Management</i>. United States: SAGE Publishing. ISBN:9781544370620, 1544370628.</li> <li>16. Nickell, P., Rice, A. S., and Tucker, S.P. (1976). <i>Management in Family Living</i>. New York: John Wiley&amp; Sons Inc</li> <li>17. Seetharaman, P., Batra, S., &amp;Mehra, P. (2015). <i>An Introduction to Family Resource Management</i>. New Delhi: CBS Publishers &amp;Distributors (ISBN 13: 9788123911861)</li> </ol>
<b>Course outcomes</b>	<ol style="list-style-type: none"> <li>1. Understanding of the concepts related to family resource management</li> <li>2. Appreciation of the significance of the management process in the efficient use of resources</li> <li>3. Imbibing nuances of human values and standards for successful management and decision making</li> <li>4. Focus on management of human energy as a family resource</li> </ol>

**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSC-141  
**Title of the Course** : Fundamental of Clothing Construction  
**Number of Credits** : 3P  
**Effective from AY** : 2023-24

<b>Pre-requisites of the course</b>	Nil	
<b>Course Objectives:</b>	<ul style="list-style-type: none"> <li>• Develop an understanding about the basics of clothing construction</li> <li>• Learn about the principals involved in clothing construction.</li> <li>• Know about various sewing equipment that are essential in a sewing room.</li> <li>• Learns to construct articles.</li> <li>• Develop skill in coordinating fabrics, patterns and supportive materials</li> </ul>	
<b>Content:</b>		<b>No. of Hours</b>
	<b>Unit-I.</b> Introduction History of Clothing. Origin of Clothing Use of clothing among primitive people Clothing in relation to culture Psychological aspects of clothing Self-respect, self-enhancement, self-expression, gender desirability and Individuality Socio-psychological aspects of clothing . Significance of uniforms and national costumes.Clothes for conformity, mobility and aesthetic appearance. Terminology: Clothing, fabric, fashion, fad, silhouette, weaving, knitting, felting, plackets, brands, clothing symbolism, tradition,	<b>10</b>
	<b>Unit-II.</b> Sewing Machines Types of sewing machines Mechanical Sewing Machine. Electronic Sewing Machine. Computerized or Automated Sewing Machine. Embroidery Machine.	<b>10</b>
	<b>Unit-III.</b> Design Components Elements and Principles of Design Introduction Basic elements of design Basic principles of design Relation between elements and principles of design to the Clothing and Fashion Color, line and texture in relation to: Age, Season Occasion Figure and Complexion	<b>10</b>
	<b>Unit-IV.</b> Components of Garments Garment Silhouettes , Introduction to basic Garments Skirts Blouses Pants Introduction to Garment detailing for Necklines Fullness Pockets Seams Sleeve Yoke and Plackets.	<b>10</b>
<b>Unit-V.</b> Pattern cutting tools Sewing equipment: its use and care Fundamentals:Preparing woven fabrics for cutting: straightening and blocking of fabrics Hand sewing techniques (Bastings/Slip stitch and Hemming) Seams (Plain, Run and fell, French, Lapped, Double sewn, Pinked) Fasteners (Press button, Button and buttonhole, Pant hook and	<b>30</b>	

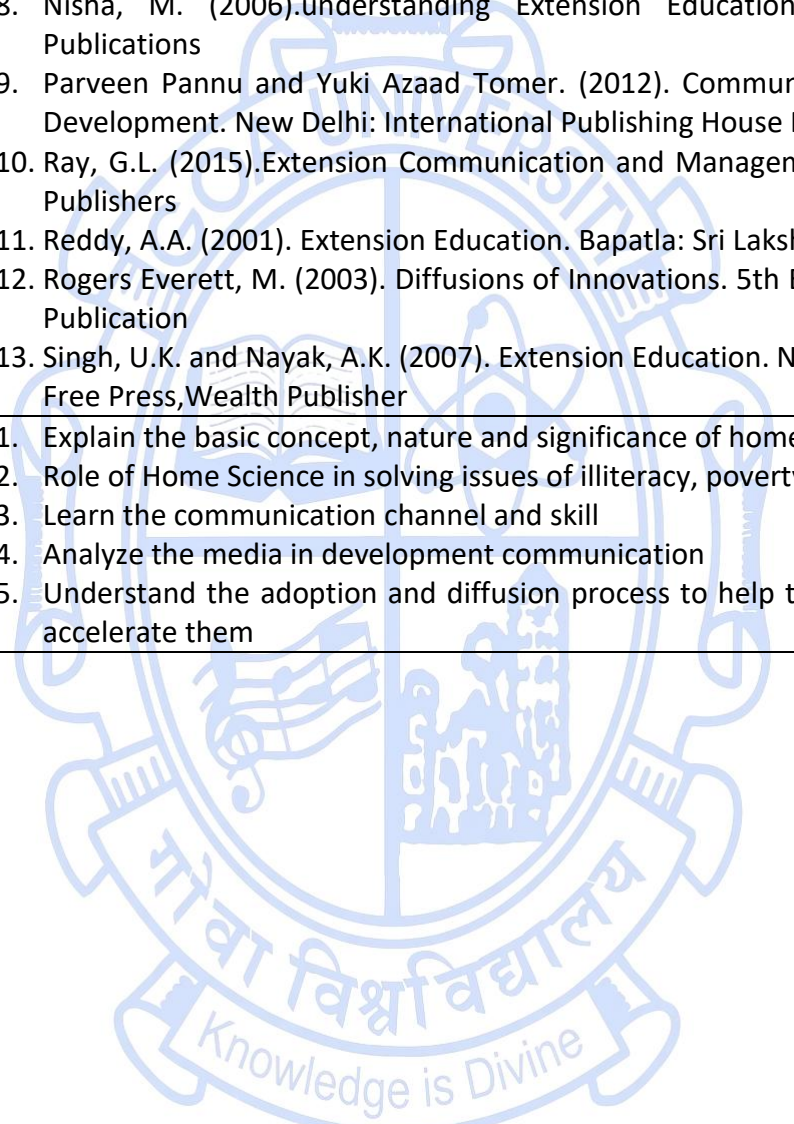
	<p>bar, Velcro, Hook and eye)  Piping, Bias Facing and Fitted Facing (Concave/Convex/Inner corner/Outer corner)  Edge finishing (Groove and Edge, Edging with laces)  Basic Blocks and Sleeve</p>	
	<p><b>Unit-VI: Surface embellishment</b>  Embroidery  Fabric painting  Stencil printing  Wardrobe Styling  Exploring types of garments , learning to coordinate mix-n-match and style attire to create different looks by accessorizing  Dressing up for specific occasion .  Dressing as per different body types.  · Basic Clothing Concepts  - Introducing body measurements  Reading design drawings and patterns with various yokes/pleats/gathers/necklines/sleeves/garment openings.  -Basic drawing and planning garment details  -Understanding and selecting fabrics</p>	<b>20</b>
<b>Pedagogy:</b>	Regular lectures, ICT enabled learning experiences	
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Armstrong, Pearson. (1995), Pattern making for Fashion Design, Fairchild Publication, New York 1995 (Indian Ed.)</li> <li>2. Cream, Penelope, (1996), The Complete Book of Sewing - A Practical Step by Step Guide to Sewing Techniques, DK Publishing Book, New York,</li> <li>3. Dorothy wood, the practical encyclopaedia of sewing, Anness publishing Ltd, London.</li> <li>4. Holman, Gillian. (1997), Pattern Cutting Made Easy, BSP.</li> <li>5. Janace E. Bubonia. (2012), Apparel production terms and processes, Fairchild Books, New York.</li> </ol>	
<b>Course Outcomes:</b>	<ol style="list-style-type: none"> <li>1. Understand basic principles of clothing construction.</li> <li>2. Comprehend the importance and function of clothes.</li> <li>3. Identify the common fabrics used for clothing construction</li> <li>4. Utilize design components in garment construction</li> <li>5. Gain an insight of various sewing machines and other sewing equipment's available in the market, their functioning &amp; common problems faced while usage.</li> <li>6. Understands various garment construction process.</li> <li>7. Co-ordinates fabrics, patterns and supportive materials</li> <li>8. Construct the garment</li> </ol>	

**SEMESTER II**

**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSC-101  
**Title of the Course** : Home Science Extension and Development  
**Number of Credits** : 3T+1 P  
**Effective from AY** : 2023-24

<b>Pre-requisites for the Course:</b>	Nil	
<b>Course Objectives:</b>	<ul style="list-style-type: none"> <li>Understand the <u>meaning</u> process and evolution of extension and extension systems of pre-independence era to present era.</li> <li>Comprehend the relationship between home science education with extension system.</li> <li>Familiarize with the structural and functional concepts of rural society.</li> <li>Acquire Knowledge regarding various existing extension and rural development programmes</li> </ul>	
<b>Content:</b>		<b>No. of Hours</b>
	<b>Unit I</b> Meaning and philosophy of Home Science education; Historical development and present status of Home Science; Home Science Institutions; Role and scope of Home Science towards career development.	<b>10</b>
	<b>Unit II</b> Extension Education- concept and importance, philosophy, principles and objectives. Evolution of extension education- glimpses of pre- and post-independence era. Community: Meaning and definition, types of communities, community mobilization leadership, participation-PRA. Community development programmes- concept, objectives, organization, activities, achievement and failures.	<b>10</b>
	<b>Unit III</b> Concept of Development Characteristics of developing countries. Measuring Development. Indices of measuring Development. Community Development Origin, Organization and function of community development. Growth and Development of Panchayati Raj. Rural Institutions of India. Village school, Mahila mandal, Youth clubs	<b>15</b>
	<b>Unit IV</b> Programme planning Programme Planning: Principles and importance in extension. Evaluation of Programme. Home science for Rural Development Role of Home Science in solving issues of illiteracy, poverty and health. Home science extension workers for Rural Development. Characteristics of extension workers Current rural development programmes/ Organizations- SGSY, MGNREGA, IAY, ICDS, Total sanitation schemes/ campaigns etc. Role of NGOs in rural development.	<b>10</b>
	<b>Practical</b> Preparation of Simple literature to raise awareness of the urban and rural community regarding community development. Conduct awareness camps Visit to KVK and participate in their programs Collecting information regarding various schemes of Government of Goa and India	<b>30</b>
<b>Pedagogy:</b>	Regular lectures, debates, field visits, ICT enabled learning experiences	

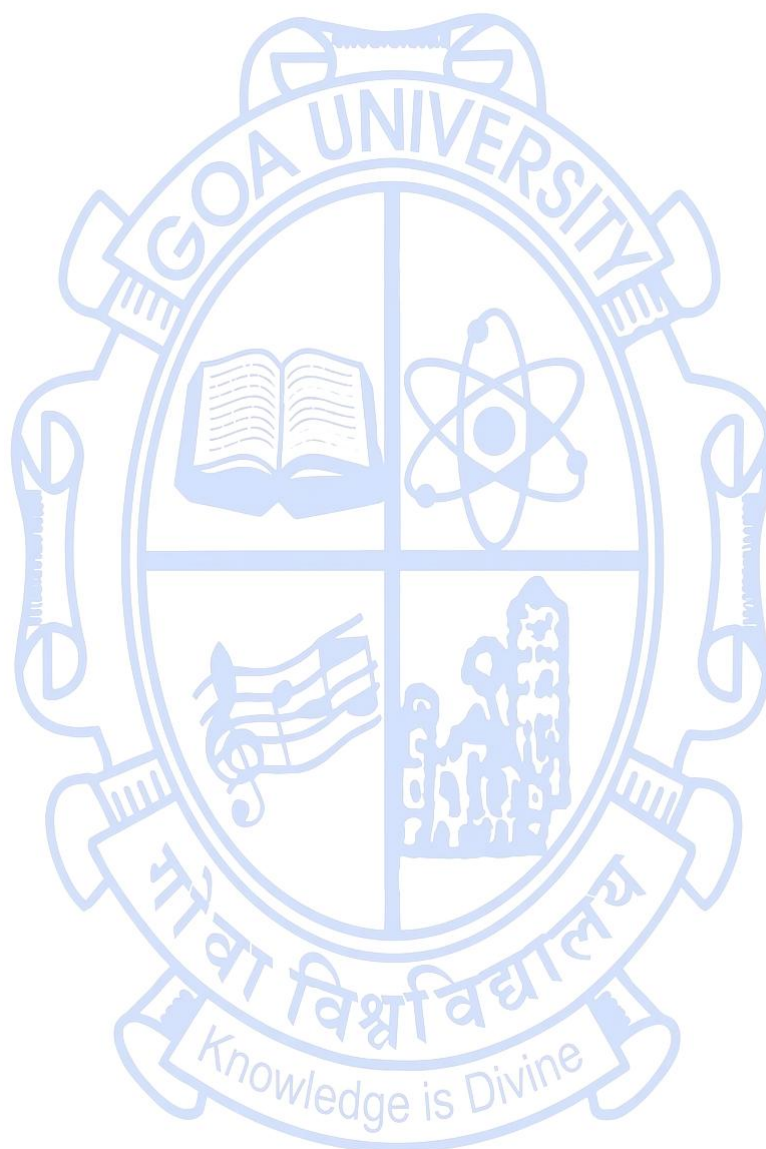
<p><b>References/ Readings:</b></p>	<ol style="list-style-type: none"> <li>1. Shah, Chandra and Joshi (1989) Fundamentals of Teaching Home Science, Sterling publishers, Delhi.</li> <li>2. Dahama O.P. and Bhatnagar O.P., Educational and Communication for Development (1985), Oxford &amp; IBH Publishing Co. Pvt Ltd, New Delhi</li> <li>3. Supe, An Introduction to Extension Education (1983), oxford IBH publications</li> <li>4. Chandra A., Shah A. 1987, Non Formal Education for All, Sterling Publishers, New Delhi</li> <li>5. Gupta, D. (2007).Development communication in Rural Sector. New Delhi:</li> <li>6. Meenakshi Raman and Sangeetha Sharma. (2013). Technical Communication-Principles and Practice. New Delhi: Oxford University Press Mukhopadhyay Abhijeet Publication</li> <li>7. Nair, R. (1993). Perspectives in Development Communication. New Delhi:</li> <li>8. Nisha, M. (2006).understanding Extension Education. New Delhi: Kalpay Publications</li> <li>9. Parveen Pannu and Yuki Azaad Tomer. (2012). Communication Technology for Development. New Delhi: International Publishing House Pvt Ltd.</li> <li>10. Ray, G.L. (2015).Extension Communication and Management. Ludhiana: Kalyani Publishers</li> <li>11. Reddy, A.A. (2001). Extension Education. Bapatla: Sri Lakshmi Press</li> <li>12. Rogers Everett, M. (2003). Diffusions of Innovations. 5th Edition. New York: Sage Publication</li> <li>13. Singh, U.K. and Nayak, A.K. (2007). Extension Education. New Delhi: Common The Free Press,Wealth Publisher</li> </ol>
<p><b>Course Outcomes:</b></p>	<ol style="list-style-type: none"> <li>1. Explain the basic concept, nature and significance of home Science Education.</li> <li>2. Role of Home Science in solving issues of illiteracy, poverty and health.</li> <li>3. Learn the communication channel and skill</li> <li>4. Analyze the media in development communication</li> <li>5. Understand the adoption and diffusion process to help the extension agents to accelerate them</li> </ol>



**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSC-112  
**Title of the Course** : Fibre to Fabric  
**Number of Credits** : 3T+1P  
**Effective from AY** : 2023-24

<b>Pre-requisites for the Course:</b>	Nil	
<b>Course Objectives:</b>	1. To introduce students to the basics of textile fibers, yarns and fabrics. 2. To give an insight into the new developments in textiles. 3. To equip students with the knowledge of the care and maintenance of textiles.	
<b>Content:</b>		<b>No. of Hours</b>
	<b>Unit I</b> Fibers: a. Introduction to textile fibers b. Introduction to polymerization and molecular arrangement of fibers c. Classification of fibers d. Brief study of the cultivation/manufacturing processes, properties and uses of the following major fibers: Cotton, Jute, Linen, Wool, Silk Viscose Rayon Nylon, Polyester, Acrylic e. Study of blends – blending and its advantages, common blends and end uses f. Brief study of minor fibers: source, properties and end uses Natural (cellulosic): Hemp, Pina, Kapok, Banana Natural (proteinic): Mohair Synthetic: Elastomeric, Metallic, Glass, Carbon	<b>20</b>
	<b>Unit II</b> Yarns: a. Introduction to yarns b. Yarn formation: Brief history of spinning (hand and mechanical spinning) c. Spinning: i.Yarn twist: Definition, Directions and Types of twist ii.Spun yarn: Ring spinning and Open-end spinning iii.Filament yarn: Monofilament, Smooth filament, Tape and network yarns, Bulk continuous filament yarn d. Classification of yarns: single, complex, composite	<b>10</b>
	<b>Unit III</b> Fabrics: Woven: Yarn preparatory stages, parts of the loom, steps in weaving and basic weaves (plain, satin, sateen and twill) Knitted: Introduction to knitting and uses Introduction to Non–woven fabrics. Care labels. Recent Developments in fiber, yarn and fabrics	<b>15</b>
	<b>Practical</b> Identification of fibres and yarns Identification of weaves and fabrics Tests for Fibres Yarns and Fabrics Spinning and weaving Technology	<b>30</b>
<b>Pedagogy:</b>	Regular lectures, ICT enabled learning experiences	
<b>References/ Readings:</b>	1. Corbman, B. P. (1985). Textiles: Fibre to Fabric. (6P thP Ed.).New York: Gregg Division/McGraw Hill Collier, B. J. and Phyllis, 2. G. T. (2001). Understanding Textiles. New Jersey: Prentice Hall. Cook. 3. J.G (2001) Handbook of Textile fibers- Vol I Woodhead Publishing Ltd.Cambridge D'Souza, 4. N. (1998). Fabric Care. India: New Age International. Gohl, L.P.G And Velinsky 5. L.D(2005) Textile Science (2P ndP Ed.) CBS Publishers and Distributors, New Delhi Gokerneshan, 6. N (2004), Fabric Structure and Analysis, New age International Publishers, New Delhi Gong, R. H. and Wright, 7. R. M, (2002) Fancy Yarns: Their manufacture and application, Woodhead Publishing Ltd, Cambridge Hollen, N., Saddler, J., Langford, A.L. & Kadolf, 8. S.J. (1988).Textiles.(6P thP Ed). New York: Macmillan. Joseph,	

	<p>9. M. L. (1992).Introductory Textile Science.(2P ndP Ed.). New York: Holt, Rinehart and Winston. Joseph,</p> <p>10. M.L. .Essentials of Textiles. New York:</p>
<b>Course Outcomes:</b>	<ol style="list-style-type: none"> <li>1. Develop an understanding of concepts and basics of textiles.</li> <li>2. Understands and define the key textile terms.</li> <li>3. Develop critical understanding of the techniques of yarn and fabric manufacture.</li> <li>4. Identify the fibres, yarn and fabrics for its appropriate use.</li> </ol>



**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSC-132  
**Title of the Course** : Development in Adolescence  
**Number of Credits** : 3T  
**Effective from AY** : 2023-24

<b>Pre-requisites for the Course:</b>	<ol style="list-style-type: none"> <li>1. A Basic understanding of development in childhood</li> <li>2. Basic knowledge of human development</li> <li>3. Ability to comprehend and write in one's own words about simple concepts</li> </ol>	
<b>Course Objectives:</b>	<ol style="list-style-type: none"> <li>1. To introduce students to the scientific study of adolescence.</li> <li>2. To help students learn about key areas of adolescent development and the issues faced during: puberty, health, cognitive and moral development, self, identity, emotions, gender, personality, and sexuality.</li> <li>3. To help students explore the various contexts which can influence adolescent development: family/ parents/ siblings/ peers/ friends/ school/ culture/ media.</li> <li>4. To expose students to learnings of how to foster well-being in adolescence.</li> </ol>	
<b>Content:</b>		<b>No of hours</b>
	<p><b>Unit 1 - Introduction, History, and Biological Development</b></p> <ul style="list-style-type: none"> <li>• Historical perspective of the study of adolescence: Developmental Tasks, Storm and Stress, adolescence as a new stage in human development, stereotyping of adolescents, positive youth development theory</li> <li>• Importance of studying adolescents; status of adolescents in the world and in India</li> <li>• Puberty: determinants, growth spurt, sexual maturation, secular trends in puberty, pubertal timings and health care, psychological dimensions</li> <li>• Adolescent health as a critical juncture: nutrition, exercise and sports, sleep, leading causes of death</li> </ul> <p><b>Cognitive and Moral Development</b></p> <ul style="list-style-type: none"> <li>• The cognitive development view: Piaget and Elkind</li> <li>• The information processing view: characteristics of the information-processing view, attention, memory, executive functioning (decision-making, reasoning, critical thinking, creative thinking)</li> <li>• Moral development: Piaget, Kohlberg, Religion and spirituality</li> </ul>	<b>15</b>
	<p><b>Unit 2 - Self, Identity, and Emotions</b></p> <ul style="list-style-type: none"> <li>• Self: what is the self, multidimensionality, self-concept vs. self-esteem, characteristics of an adolescent's self</li> <li>• Identity: Erikson's identity vs. role diffusion, psychosocial moratorium, identity crisis, Marcia's four statuses of identity</li> <li>• Emotions: definition, relationship with self-esteem, adolescence as a period of storm and stress, hormones and emotions, social aspects and emotions, emotional competence</li> </ul> <p><b>Personality, Gender, and Sexuality</b></p> <ul style="list-style-type: none"> <li>• Personality: different conceptions of personality, the Big Five model of personality, person vs. situation as determinants of behavior</li> <li>• Gender: femininity, masculinity, role of culture in gender development, sex vs. gender, gender differences (activities and interests, personal-social attributes, social relationships, styles and symbols)</li> <li>• Sexuality: sex vs. sexuality, importance of sexuality in adolescence, challenges related to sexuality</li> </ul>	<b>15</b>
	<b>Unit III - Contexts of Adolescent Development</b>	<b>15</b>

	<ul style="list-style-type: none"> <li>● Parents: developmental changes in parents and adolescents, changing parent-adolescent relationships, parents as managers, parenting styles, parent-adolescent conflict, autonomy and attachment</li> <li>● Siblings: sibling roles</li> <li>● Peer relations: peer group functions, family-peer linkages, peer conformity, peer statuses, friendship, dating and romantic relationships</li> <li>● Schools; adolescence as a critical juncture in achievement; technology; career choices, process and factors influencing it</li> <li>● Role of culture; youth in poverty</li> </ul> <p><b>Challenges, Problems and Wellbeing in Adolescence</b></p> <ul style="list-style-type: none"> <li>● Teen suicide: statistics, common situations in which adolescents commit suicide, symptoms of depression, prevention and intervention</li> <li>● Academic stress: statistics/profile of adolescents in India related to academic stress, reasons, strategies for coping</li> <li>● Bullying, ragging, aggression/violence, and juvenile delinquency: statistics/profile of adolescents in India, prevention and intervention</li> <li>● Substance abuse: smoking, alcohol and drugs; influence of peers; prevention and intervention</li> <li>● Strategies for creating well-being in adolescence</li> </ul>	
<b>Pedagogy:</b>	<ul style="list-style-type: none"> <li>● Powerpoint Presentations</li> <li>● Songs/Videos</li> <li>● Interactive Activities (Role Play, Puzzles, Games, etc.)</li> <li>● Observation &amp; Report Writing</li> <li>● In-Class discussions &amp; debates</li> </ul>	
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Berk, L.E. (2007). <i>Development through the Lifespan</i> (4<sup>th</sup> Ed). NY: Pearson Education Inc.</li> <li>2. Santrock, J. W. (2013). <i>Adolescence</i> (14<sup>th</sup> Ed.). NY: McGraw-Hill. PP</li> <li>3. Rice, F. P. &amp; Dolgin, K. G. (2008). <i>The Adolescent: Development, Relationships, and Culture</i> (12<sup>th</sup> Ed.). NY: Pearson Education Inc.</li> </ol>	
<b>Course Outcomes:</b>	<p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Understand the various nuances of development in adolescence.</li> <li>2. Understand and evaluate their own development</li> <li>3. Identify issues they face in various spheres and decipher possible solutions</li> <li>4. Recognize their personality traits and attributes, for example, learning styles</li> <li>5. Prevent themselves from vices and learn to evaluate possible pitfalls</li> <li>6. Handle relationships with peers in a more mature manner</li> </ol>	



**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSC-142  
**Title of the Course** : ART PRINCIPLES & INTERIOR DECORATION  
**Number of Credits** : 3P  
**Effective from AY** : 2023-24

<b>Pre-requisites for the Course</b>	Nil	
<b>Course Objectives</b>	<ul style="list-style-type: none"> <li>To understand the concept of elements and principles of design</li> <li>To learn the importance of art element, principles, and their applications in interior decoration.</li> <li>To learn important furnishing require to decorate for interior</li> <li>To develop the design using elements and principles of design</li> </ul>	
<b>Content</b>		<b>No of Hours</b>
	<b>UNIT I: Design Fundamentals in Designing Interior Space</b> (Including Demonstration and Field visits) <ul style="list-style-type: none"> <li>Life Space and Proxemics – significance in interior space designing</li> <li>Concept and Meaning of Aesthetics, perception, and good taste in Designing</li> <li>Interior Design Vs Interior Decoration</li> <li>Design: Definition, types and Classification</li> <li>Plastic elements - elements of design – application in interiors</li> <li>Rudiments of Design - Principles of Design – application in Interiors</li> </ul>	<b>20</b>
	<b>UNIT II: Aesthetic and Functional Considerations in Designing Interior Space</b> (Including demonstrations and field visits) <p><b>Colour –</b></p> <ul style="list-style-type: none"> <li>Definition of color, colour spectrum, Pigment, Prang Colour system,</li> <li>Classification of colors, color harmonies – use and application in interiors.</li> <li>Colour Psychology, Colour &amp; composition,</li> <li>Type of colors available in the market and their uses.</li> </ul> <p><b>Furniture –</b></p> <ul style="list-style-type: none"> <li>Introduction of furniture, classification, and their importance,</li> <li>Factors influencing selection and arrangement,</li> <li>Care and maintenance of furniture</li> <li>Current market trend in furniture</li> </ul> <p><b>Lighting –</b></p> <ul style="list-style-type: none"> <li>Light Sources, qualities, and features</li> <li>Requirements of good lighting, use/ role, brightness - measurement for adequacy, avoidance of glare and shadow</li> <li>Examples of lighting concepts in interior</li> </ul> <p><b>Soft furnishings in the interior –</b></p> <ul style="list-style-type: none"> <li>Definition, classification, and use in different areas</li> <li>Window treatments- hard and soft and their uses</li> </ul> <p><b>Accessories in the interior –</b></p> <ul style="list-style-type: none"> <li>Definition, functions, use, and classification;</li> <li>Explore accessories of the interior available in the market</li> <li>Role in completing a design needs in an interior</li> </ul>	<b>30</b>
	<b>Flower arrangements,</b> <ul style="list-style-type: none"> <li>Flower and its characteristics</li> <li>Types of Flower Arrangements,</li> </ul>	<b>10</b>
	<b>PORTFOLIO</b> 1. Introduction to the drawing - Exploring elements of design.	<b>30</b>

	<ol style="list-style-type: none"> <li>2. Development of design through combining two or more elements of design.</li> <li>3. Different techniques of sketching, and lettering techniques.</li> <li>4. Colour wheel, create a color composition using different color schemes,</li> <li>5. Spatial effect color (Gouache, watercolors, pastels)</li> <li>6. Develop a design for Alpana and Rangoli</li> <li>7. Develop Paper cutting decorating item</li> <li>8. Use of waste material for making accessories</li> <li>9. Napkin folding</li> <li>10. Flower Arrangements</li> <li>11. Use different materials like Clay, Cardboard, and Thermo coal to create 3 Dimensional designs</li> </ol>	
<b>Pedagogy</b>	Class tests, assignments, records, portfolio presentation, model making	
<b>References/ Readings</b>	<ol style="list-style-type: none"> <li>1. Bachwal, L., Ray, G. G. (2012). Residential Interior Design for the Elderly and Physically Challenged: A Guide Book on Ergonomic Dimensional References for Designing Home Interior. India: Shroff Publishers &amp; Distributors Pvt. Limited. ISBN: 9789350236338.</li> <li>2. Bhargava, B. (2001). Family Resource Management and Interior Decoration, Delhi: University Book House</li> <li>3. Bhargava, B. (2001). Housing and Space Management. Jaipur: University Book House Ltd.</li> <li>4. Bush, Akiko.(1988). Floorworks: Bringing Rooms to Life with Surface Design and Decoration. Published By: Toronto Bantam Book. ISBN: )553-05253-5.</li> <li>5. Cicale, A. (2004). The Art &amp; Craft of Hand Lettering: Techniques, Projects, Inspiration. United States: Lark Books.</li> <li>6. Crafti. (2004). The office – Designing for Success. Jaipur: Images Publication</li> <li>7. Creative Paper Cutting: Basic Techniques and Fresh Designs for Stencils, Mobiles, Cards, and More. (2010). United Kingdom: Shambhala. ISBN: 9781590307311.</li> <li>8. Deshpande, R.S. (2000). Build Your Own Home. Pune: United Book Corporation</li> </ol>	
<b>Course outcomes</b>	<ol style="list-style-type: none"> <li>1. Practicing knowledge gained in art and principles helps refine personal aesthetic senses.</li> <li>2. Enable to develop basic designs or motifs.</li> <li>3. Enable reading and comprehending requirements of various interior furnishings as per the need of the home.</li> <li>4. Examining current market trends and prominent styles of interior furnishing.</li> </ol>	

## SPECIALIZATION 1. FOOD, NUTRITION & DIETETICS

Semester III

Name of the Programme : B.Sc. Home Science

Course Code : HSF-200

Title of the Course : Nutrition Science

Number of Credits : 4 (3T+1P)

Effective from AY : 2024-2025

<b>Pre-requisites for the Course:</b>	HSC-100 Food Science	
<b>Course Objectives:</b>	<ul style="list-style-type: none"> <li>To enable the students to apply knowledge of nutrition to daily life.</li> <li>Understand the vital link between foods, nutrition and health</li> <li>Understand the importance and role of macronutrients and micronutrients in health and Identify food sources</li> </ul>	
<b>Content:</b>		<b>No of Hours</b>
<b>Unit-I</b>	<b>Science of Nutrition, Concept of Nutrition and Energy metabolism</b> Definition of nutrition, health, nutritional status and malnutrition. Definition, units of measurement, direct and indirect calorimetry; Determination of energy value of food, Total Energy requirement, Basal Metabolic Rate, Factors affecting BMR Thermic effect of food, Recommended Dietary Allowances and Sources	<b>7</b>
<b>Unit III</b>	<b>Macronutrients</b> Carbohydrates- Definition, composition, functions, maintenance of blood sugar levels, requirement, sources, Outline of digestion and absorption; Dietary fiber Definition, classification, physiological effects and sources. Proteins- Definition, composition, nutritional classification of proteins and amino acids, functions, sources, requirements, Outline of digestion and absorption. Lipids- Definition, composition, functions, sources, requirements, Outline of digestion and absorption. Essential fatty acids – Definition, functions, sources and effects of deficiency.	<b>13</b>
<b>Unit- IV</b>	<b>Macro Minerals and Micro minerals</b> Macro minerals-Calcium and Phosphorous: Functions, requirements, sources and effects of deficiency. Micro minerals- Iron, Iodine, Copper, Fluorine and Zinc: Functions, sources, requirements and effects of deficiency. Electrolytes – Sodium, Potassium and Chloride: Functions, sources, requirements and effects of imbalances.	<b>12</b>
<b>Unit- V</b>	<b>Fat-soluble and Water-Soluble Vitamins</b> Fat soluble Vitamins – Vitamin A, D, E and K: Functions, requirements, sources and effects of deficiency. Water Soluble Vitamins – Thiamine, riboflavin, niacin, ascorbic acid, folic acid, vitamin B6 and vitamin B12: Functions, requirements, sources and effects of deficiency.	<b>13</b>
	<b>PRACTICAL</b> <b>Plan and Prepare Recipes for One Serving:</b> <ul style="list-style-type: none"> <li>Energy: high and low calorie –</li> <li>Dietary fibre</li> <li>Proteins – Vegetarian and Non-Vegetarian</li> <li>Omega 3 and Omega 6 fatty acid rich recipes</li> <li>Calcium</li> <li>Iron</li> </ul>	<b>30</b>

	<ul style="list-style-type: none"> <li>• Vitamin A</li> <li>• Water soluble Vitamins – Vitamin C,</li> <li>• B complex – Thiamine, Riboflavin and Niacin</li> </ul>	
<b>Pedagogy</b>	Regular lectures, Field visits, Group discussion, debates, ICT enabled learning experiences.	
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Gopalan, C. , Rama Shastri, B.V., and Balasubramanian. (2004). Nutritive value of Indian Foods, National Institute of Nutrition ( NIN ), Hyderabad.</li> <li>2. Krause, M.V. ,Humeher, M.A. , (2004). Food, Nutrition and Diet therapy, 11th edition. W.B. Saunders Company, Philadelphia, London.</li> <li>3. Longvah T ,.Ananthan R.,Bhaskarchary K and.Venkalah K (2017). Indian Food Composition Tables, National Institute of Nutrition (NIN), Hyderabad.</li> <li>4. Mahtab. S.Bamji, Kamala Krishnaswamy and G.N.V Brahmam, Text Book of Human Nutrition, Oxford and IBH Publishing Company, Third Edition</li> <li>5. Mangala Kango, Normal Nutrition, Curing diseases through diet, CBS Publications, First edition, 2005.</li> <li>6. Robinson and Lawler, Normal and Therapeutic Nutrition Macmillan USA</li> <li>7. Srilakshmi B., Nutrition Science, New Age International (P) Ltd, Publishers, Fifth multi-colour edition, 2016.</li> <li>8. Srilakshmi, B..(2002). Nutrition Science 4th ed. New Age International Pvt. Ltd., New Delhi.</li> <li>9. Sue Rodwell Williams, Nutrition and Diet Therapy, C.V. Melskey Co., 6th edition, 2000.</li> <li>10. Sumathi R. Mudambi, Rajagopal, M.V., Fundamentals of Foods and Nutrition, New Age International (P) Ltd, Publishers, Third edition, 1997.</li> </ol>	
<b>Course Outcome</b>	<p>At the end of this course the learner will be able to:</p> <ol style="list-style-type: none"> <li>1. Summarize the fundamental and applied aspects of human nutrition.</li> <li>2. Explain the functions of macronutrients and micronutrients in maintaining health and well-being.</li> <li>3. Assess nutrient deficiency disorders based on clinical manifestations and identify food sources rich in essential nutrients.</li> <li>4. Apply knowledge of nutrition to plan balanced diets and menus for the prevention and management of deficiency conditions.</li> <li>5. Evaluate the nutritional adequacy of diets using principles of nutrient requirements and dietary recommendations.</li> </ol>	

Name of the Programme : B.Sc. Home Science  
 Course Code : HSF-201  
 Title of the Course : Food Microbiology  
 Number of Credits : 4 (3T+1P)  
 Effective from AY : 2024-25

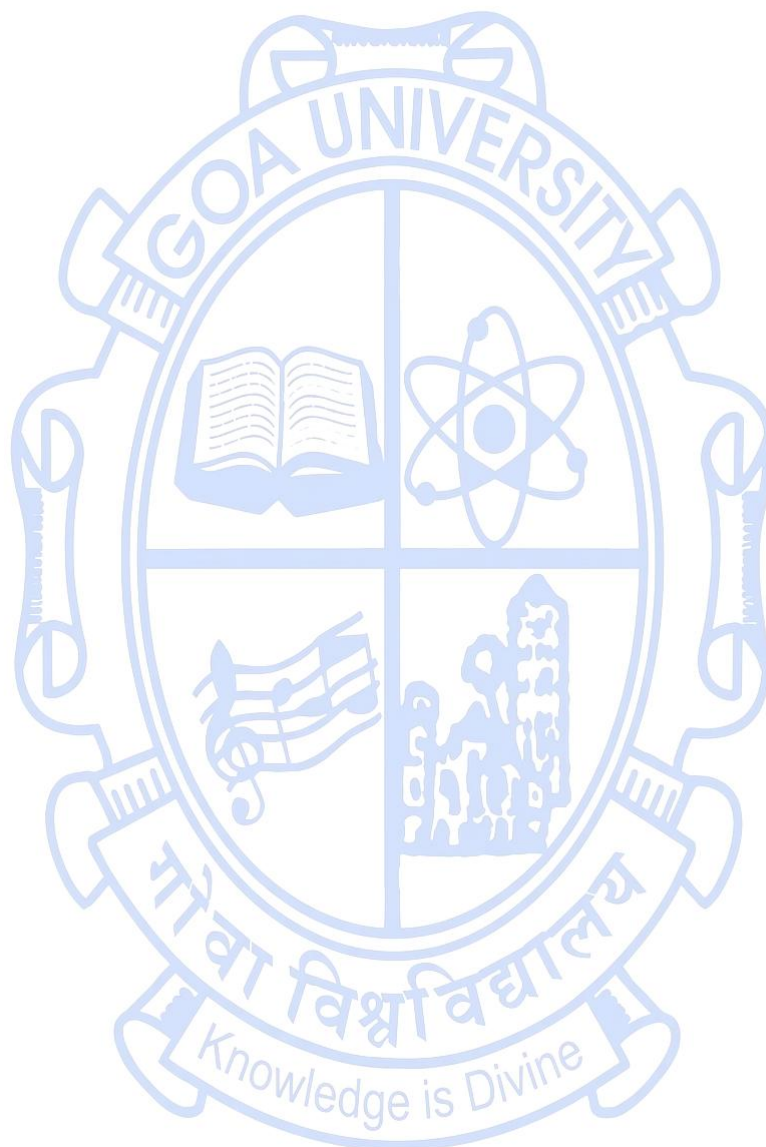
<b>Pre-requisites for the Course:</b>	HSC-100 Food Science	
<b>Course Objectives:</b>	<ul style="list-style-type: none"> <li>To obtain knowledge on morphology of microorganisms.</li> <li>To understand the factors influencing the growth of microorganisms.</li> <li>To apply the preservation principles and methods to preserve the foods from microbial contamination.</li> <li>To explore the beneficial effects of microorganisms in the development of fermented foods.</li> </ul>	
<b>Content:</b>		<b>No of hours</b>
<b>Unit I</b>	<b>Introduction to Microbiology</b> Morphology and Growth factors of Microorganisms Definition and History, Light and electron Microscopy, General Morphology of Microorganisms - Bacteria, Fungi, Algae, Yeast and Virus, Bacteriophage, Microbial Biomass, Growth Curve, Definition of Batch and Continuous culture, Factors Affecting Growth - Intrinsic Factors (Nutrient Content, pH, Redox Potential, Antimicrobial Barrier and Water Activity) and Extrinsic Factors (Relative Humidity, Temperature and Gaseous Atmosphere)	<b>10</b>
<b>Unit II</b>	<b>Microbiology of Plant based Foods</b> Contamination and Spoilage, Preservation of Vegetables and Fruits, Cereals and Cereal Products, Pulses, Nuts and Oilseeds, Sugar and Sugar Products	<b>9</b>
<b>Unit III</b>	<b>Microbiology of Animal based Foods</b> Contamination and Spoilage, Preservation of Milk and Milk Products, Canned Foods, Fish, Meat, Egg and Poultry	<b>8</b>
<b>Unit IV</b>	<b>Beneficial Effects of Microorganisms</b> Microbiology of fermented milk - Starter lactic cultures, Fermented milk products: yogurt, butter and cheese, other fermented foods: idli, bread, sauerkraut, meat, soy-based foods, Alcoholic Beverages and Vinegar. Nutritional value of fermented foods. Microorganisms as food: single cell protein, edible mushrooms. Probiotics: definition and uses.	<b>8</b>
<b>Unit V</b>	<b>Food Borne Diseases – Food Intoxication and Food Infection</b> Definitions and Differences, Food Intoxication vs. Food Infection Types of Food Intoxications: Bacterial Toxins, <i>Staphylococcus aureus</i> and enterotoxins, <i>Clostridium botulinum</i> and botulism Bacillus cereus and emetic vs. diarrheal types. Chemical Toxins: Naturally occurring toxins (e.g., mycotoxins, lectins) Environmental contaminants (e.g., pesticides, heavy metals) Food Infection Definition and Mechanism How pathogens invade and multiply in the gastrointestinal tract Types of Foodborne Infections - Foods involved and symptoms Bacterial Infections; Salmonella and Salmonellosis Campylobacter and Campylobacteriosis, <i>Escherichia coli</i> and associated infections, <i>Listeria monocytogenes</i> and Listeriosis Viral Infections; Noroviruses, Hepatitis A Parasitic Infections; <i>Giardia lamblia</i> , <i>Toxoplasma gondii</i> Prevention and Control measures; Safe food preparation practices	<b>10</b>

	Importance of cooking temperatures and cross-contamination prevention. Important regulations and guidelines for food safety	
	<p><b>PRACTICAL</b></p> <ul style="list-style-type: none"> <li>• Hanging Drop Method – Motility of Bacteria</li> <li>• Staining of Bacteria – Direct and Indirect</li> <li>• Differential staining - Gram Staining, Acid fast staining, Capsule staining, spore staining etc</li> <li>• Preparation of Media and Microbiological Analysis of Foods</li> <li>• MBRT of milk samples and their standard plate count.</li> <li>• Isolation of food borne bacteria from food products.</li> <li>• Isolation of food borne fungi from food products.</li> <li>• Isolation of spoilage microorganisms from bread.</li> <li>• Microbiological examination of canned foods.</li> <li>• Microbiological examination of mushrooms.</li> <li>• Effect of temperature on the spoilage of food products.</li> <li>• Visits to microbiology laboratory and report writing</li> </ul>	<b>30</b>
<b>Pedagogy:</b>	Regular lectures, demonstrations, Group discussions, ICT enabled teaching	
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Adams, MR and Moss, MO (2015) Food Microbiology, New Age International (P) Ltd., New Delhi.</li> <li>2. Alexander M. (1977) Introduction to soil microbiology. John Wiley &amp; Sons, Inc., New York.</li> <li>3. Andrews AT, Varley J. (1994) Biochemistry of milk products. Royal Society of Chemistry.</li> <li>4. Banwart GJ. (1989), Basic food microbiology, Chapman &amp; Hall, New York.</li> <li>5. Cappuccino G.J and Sherman, N (2008) Microbiology – A Laboratory Manual, Pearson Education Publishers, USA.</li> <li>6. Gopal Reddy et al, Laboratory experiments in Microbiology.</li> <li>7. Jay JM, Loessner MJ and Golden DA. (2005). Modern Food Microbiology. 7th edition, CBS Publishers and Distributors, Delhi, India.</li> <li>8. Jay M.J (2015) Modern Food Microbiology, Fourth Edition, CBS Publishers and Distributors, New Delhi</li> <li>9. Pelczar, M.J. Reid, R.D. and Chan, (1977), Microbiology, New Delhi: Tata McGraw Hill.</li> <li>10. Stainer, R.Y. Ingraha, J.L. Wheelis, M.L. Painter, P.R. (1986). General microbiology. London: Me. Millan Education Ltd.</li> <li>11. Prescott, Harley and Klein Wim. Microbiology, C. Brown Publishers.</li> <li>12. Ramesh, K.V (2012) Food Microbiology, MJP Publishers, Chennai.</li> <li>13. William C. Frazier (2014) Food Microbiology, Tata McGraw Hills Publishing Company Limited, Chennai.</li> </ol>	
<b>Course Outcomes:</b>	<p>At the end of this course the learner will be able to:</p> <ol style="list-style-type: none"> <li>1. Describe the significance and role of microorganisms in food processing and food spoilage.</li> <li>2. Interpret the principles in traditional food preservation techniques including salting, pickling, refrigeration, freezing, oxidation, and canning/bottling and chemical preservation.</li> <li>3. Analyze types of starter cultures like Lactic acid bacteria, fermented milk products, probiotics, SCP and Edible mushrooms.</li> <li>4. List the microbes causing food intoxications and food infections.</li> </ol>	

**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSF-211  
**Title of the Course** : Nutrition across the Lifespan  
**Number of Credits** : 4 (3T+1P)  
**Effective from AY** : 2024-25

<b>Pre-requisites for the Course:</b>	FY B.Sc. Home Science	
<b>Course Objectives:</b>	<ul style="list-style-type: none"> <li>To introduce students to the basic concepts of meal planning.</li> <li>Understand the physiological changes throughout the lifespan.</li> <li>Acquaint themselves with the dietary goals and dietary guidelines for Indians across the life cycle.</li> <li>To equip them with knowledge of physiological changes, nutritional requirements, nutritional concerns and healthy food choices during the life cycle.</li> </ul>	
<b>Content:</b>		<b>No of hours</b>
<b>Unit I:</b>	<b>Principles of Meal Planning</b> Food groups and food exchange list, Factors affecting meal planning and food related behaviour, Methods of assessment of nutrient requirements, Dietary guidelines for Indians	<b>10</b>
<b>Unit II:</b>	<b>Nutrition during Adulthood</b> Physiological changes, EAR and RDA, nutritional guidelines, nutritional concerns, energy balance and healthy food choices - Adults, Pregnant women, Lactating mothers, Elderly	<b>17</b>
<b>Unit III:</b>	<b>Nutrition during Childhood and Adolescence</b> Growth and development, growth reference/standards, EAR and RDA, nutritional guidelines, nutritional concerns, and healthy food choices – Infants, Preschool children, School children, Adolescents	<b>18</b>
	<b>PRACTICAL</b> 1. Introduction to meal planning 2. Identifying rich sources of nutrients 3. Use of food exchange lists 4. Planning nutritious diets for: Young Adult, Pregnant woman, Lactating mother, Pre-schooler, School age child/adolescent, Elderly. Cooking any three planned diets 5. Planning and cooking nutrient rich dishes/ snacks for: Infants (complementary foods), Children, Adolescent and Adults	<b>30</b>
<b>Pedagogy:</b>	Regular lectures, demonstrations, Group discussions, case studies, ICT enabled teaching and learning	
<b>References/ Readings:</b>	1. Agarwal, A., & Udipi, S. A. (2014). <i>Textbook of Human Nutrition</i> (1st ed.). Jaypee Brothers Medical Publishers (P) LTD. 2. Bamji MS, Krishnaswamy K, Brahmam GNV (2009). <i>Textbook of Human Nutrition</i> , 3 <sup>rd</sup> edition. Oxford and IBH Publishing Co. Pvt. Ltd. 3. Chadha R and Mathur P (eds). <i>Nutrition: A Lifecycle Approach</i> . Orient Blackswan, Delhi. 2015 4. Gopalan C, Rama Sastri BV, Balasubramanian S C (1989) <i>Nutritive Value of Indian Foods</i> . National Institute of Nutrition, ICMR, Hyderabad. 5. Khanna K, Gupta S, Passi SJ, Seth R, Mahna R, Puri S (2013). <i>Textbook of Nutrition and Dietetics</i> . Phoenix Publishing House. 6. National Institute of Nutrition, ICMR. (2011). <i>Dietary Guidelines for Indians - A Manual</i> . NIN, ICMR, Hyderabad. 7. Seth V and Singh K (2005). <i>Diet Planning through the Life Cycle: Part 1 Normal Nutrition. A Practical Manual</i> . Elite Publishing House Pvt. Ltd. New Delhi.	

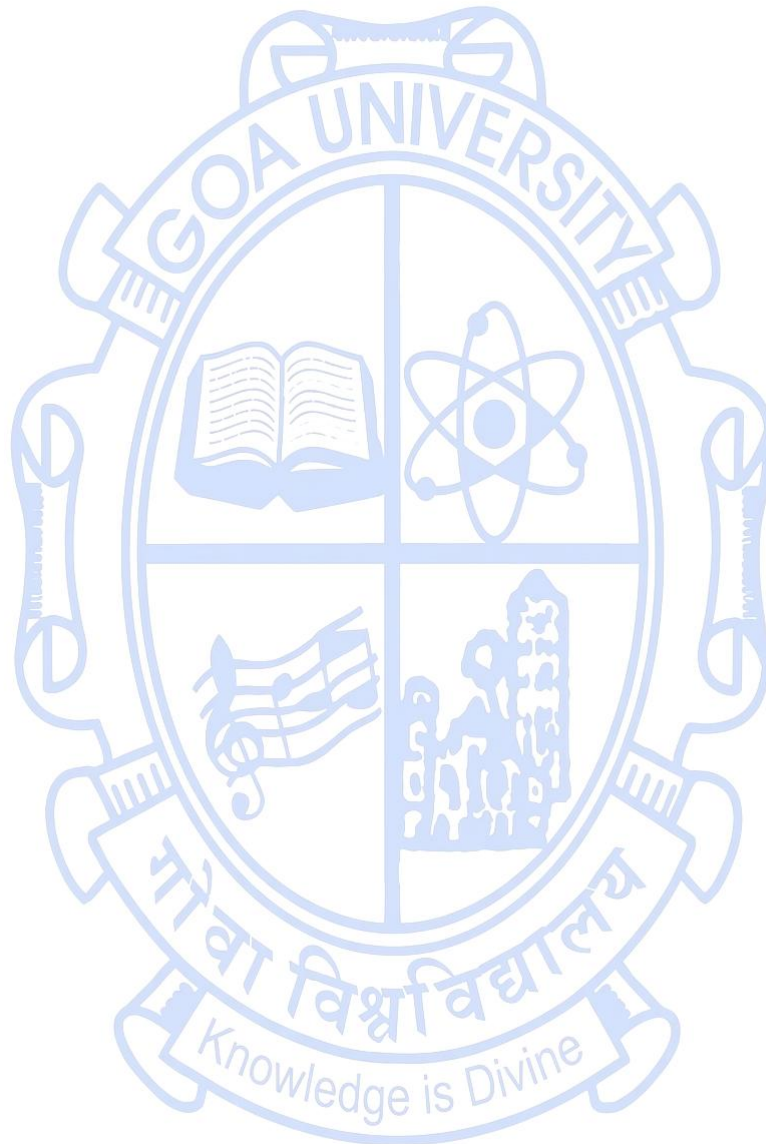
	<p>8. Srilakshmi, B. (2014). <i>Dietetics</i> (7th ed.). New Age International (P) Limited, Publishers, New Delhi.</p> <p>9. <u>Venkaiah K, Bhaskarachary K, Longvah T, Anantan. R</u> (2017) Indian Food Composition Tables. National Institute of Nutrition, ICMR, Hyderabad.</p> <p>10. Wardlaw GM, Hampl JS, Di Silvestro RA (2004). <i>Perspectives in Nutrition</i>, 6<sup>th</sup> edition. McGraw Hill.</p>
<p><b>Course Outcomes:</b></p>	<p>At the end of this course the learner will be able to:</p> <ol style="list-style-type: none"> <li>1. Describe physiological changes and nutritional requirements across the lifespan.</li> <li>2. Describe the factors affecting meal planning.</li> <li>3. Interpret the importance of food exchange list.</li> <li>4. Use food exchange list for meal planning</li> <li>5. Plan and prepare balanced meals and nutritious snacks for various age groups.</li> </ol>



**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSF-212  
**Title of the Course** : Food Safety, Sanitation and Hygiene  
**Number of Credits** : 3T  
**Effective from AY** : 2024-25

<b>Pre-requisites for the Course:</b>	HSC-100 Food Science	
<b>Course Objectives:</b>	1. Learn the various aspects of food safety 2. Understand about food laws and labeling 3. Understand the need for consumer education	
<b>Content:</b>		<b>No of hours</b>
	<b>Unit-I. Introduction to Food Safety and adulteration and Basic Principles of Food Safety</b> Food contamination: definition; Sources of contamination; Difference between food poisoning and food infection; Safety in food processing-a. Food procurement; b. Storage; c. Handling; d. Preparation e. Safety of leftover foods; Factors affecting food safety and food spoilage; Food adulteration - definition, types of adulteration in various foods- intentional, incidental and metallic contaminants	<b>8</b>
	<b>Unit-II. Food Laws and Regulations</b> National Legislation – Standard of Weight and Measures Act, ISI, Mark of BIS, FSSAI, International Laws and Agreements - FAO, Codex Alimentarius, ISO 22000 series in brief, Hazard Analysis Critical Control Point (HACCP): principles of HACCP, applications of HACCP	<b>12</b>
	<b>Unit-III. Current Food Safety Standards in India</b> Current Food Safety Regulations, Food Safety and Standards Authority of India, objectives of developing food safety standards, enforcement of structure and procedure, role of food analyst, safety analysis, action by the designated officer and report of food analyst, Food Safety Management System (FSMS), Good Practices/ PRPs - HACCP, GMP, GHP, Certification - HACCP, ISO 22000	<b>12</b>
	<b>Unit-IV. Sanitation Procedures</b> Basic Principles of Hygiene and Sanitation, Personal hygiene and Environmental hygiene, Methods of Sanitation and Hygiene, Sterilization and disinfection using heat and chemicals, Waste product handling and control- Solid and liquid waste disposal, Control of infestation- Pest control, Cleaning and sanitizing- the need for efficient cleaning program, cleaning agents, equipments; Methods to wash, rinse and sanitizing food contact surfaces., Importance and methods of pest control; Outlining methods of disposal of liquid, solid and gaseous waste	<b>8</b>
<b>Unit-V. Importance of Personal hygiene of food handlers</b> General principles of hygiene – personal and environmental hygiene, Hygienic practices in handling and serving foods, planning and implementation of a training programme for health persons.	<b>5</b>	
<b>Pedagogy:</b>	Regular lectures, demonstrations, Group discussions, case studies, ICT enabled teaching and learning experiences in terms of video lessons and documentary film shows	
<b>References/ Readings:</b>	1. Dietary Guidelines for Indians, ICMR, National Institute of Nutrition 2. Mahtab, S, Bamji S, Kamala Krishnasamy,.Brahmam G.N.V, Text Book of Human Nutrition, Third Edition, Oxford and IBH Publishing Co. P. Ltd., New Delhi, 2012. 3. Srilakshmi, B., Dietetics, New Age International (P) Ltd., New Delhi, 2015. 4. Swaminathan, M., Advanced Textbook on Food and Nutrition, Vol. 1, second Edition, Bangalore Printing and Publishing Co. Ltd., Bangalore, 2012.	
<b>Course Outcomes:</b>	At the end of this course the learner will be able to: 1. Identify causes of and prevention procedures for food-borne illness, intoxication, and infection.	

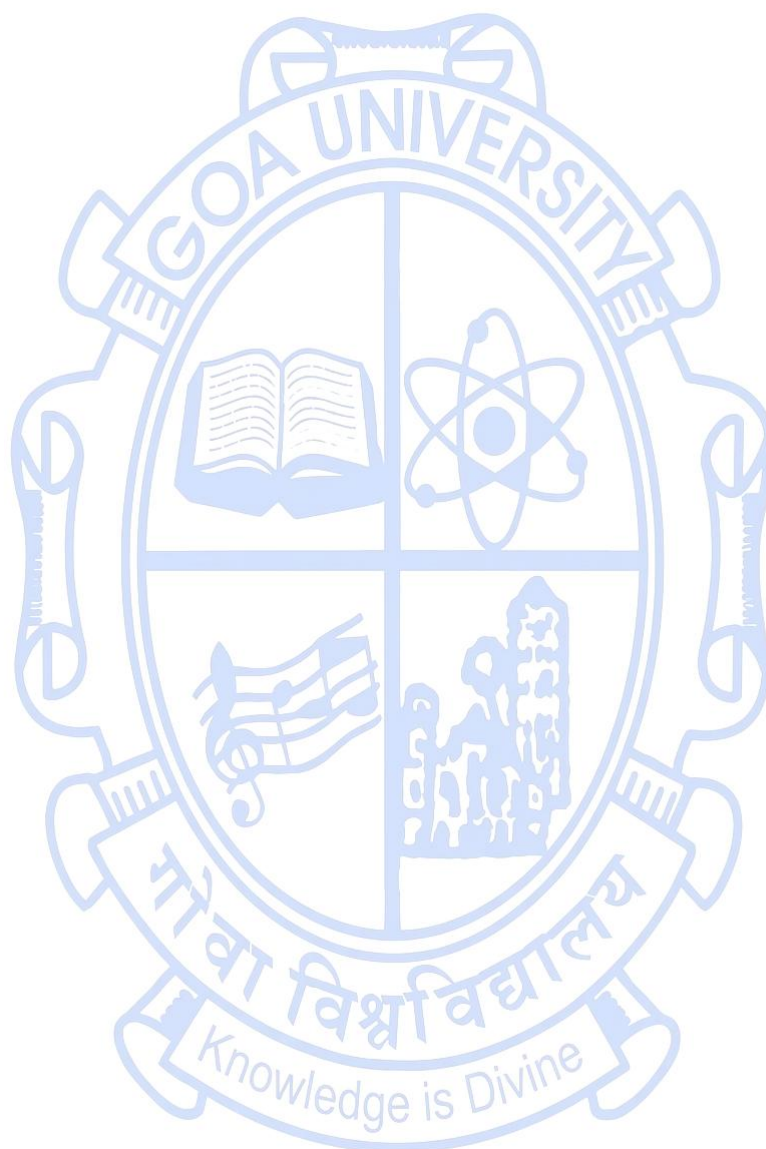
2. Demonstrate good personal hygiene and safe food handling procedures
3. Describe food storage and refrigeration techniques;
4. Explain sanitation of dishes, equipment, and kitchens including cleaning material, garbage, and refuse
5. Discuss Occupational Safety and Health Administration (OSHA) requirements and effective workplace safety programs



**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSC-241  
**Title of the Course** : Home Scale Food Processing & Preservation  
**Number of Credits** : 3 (1T+2P)  
**Effective from AY** : 2024-25

<b>Pre-requisites for the Course:</b>	FY B.Sc. Home Science	
<b>Course Objectives:</b>	<ul style="list-style-type: none"> <li>To learn the principles behind the methods of preservations.</li> <li>To understand the stages of cookery and chemical characteristics in the preservation of fruits and vegetables.</li> <li>Able to formulate preserved food products.</li> <li>Acquire skills to preserve different types of food items based on their perishability.</li> </ul>	
<b>Content:</b>		<b>No of hours</b>
<b>Unit-I.</b>	<b>Introduction to Food Preservation</b> Importance of Food Preservation, Basic Principles of Food Preservation Types of Food spoilage by Micro-organisms and by Enzymes,	<b>3</b>
<b>Unit-II.</b>	<b>Preservation Techniques</b> Drying and dehydration: Methods of drying & dehydration, different types of driers, freeze drying- General tips with drying foods. Preservation by Concentration: Role of Pectin in Preserved foods Stages in Sugar Cookery Sugar Concentrates – Principles of Gel Formation: Preservation by Using additives: Principles Involved and different Definition, Permitted Preservatives, FSSAI guidelines Fermented foods Preservation using high temperature: Pasteurization and Sterilization, Ultra heat treatment Preservation using low temperature: Refrigeration and freezing of foods	<b>10</b>
<b>Unit III</b>	<b>Preservation by Advanced Preservation Technology and packaging</b> Food Irradiation Vacuum Packing Food Packaging Materials for preserved food products	<b>2</b>
	<b>PRACTICAL</b> <ul style="list-style-type: none"> <li>Preparation of traditional Indian varieties of chips, Papads, fryums and Masala Powders</li> <li>Preparation of salted, dehydrated, preserves</li> <li>Preparation of Jam, Jelly, Marmalades, Sauce and Squash Preserves, Candied, Glazed, Crystallized Fruits, Toffee</li> <li>Preparation and Preservation of Fruit Juices, RTS and basics of canning</li> <li>Types of Pickles with Chemical Preservatives – and oil spices</li> <li>Fermented foods</li> <li>Visit to Fruits and Vegetable processing industry and writing reports</li> </ul>	<b>60</b>
<b>Pedagogy:</b>	Regular lectures, demonstrations, ICT enabled teaching and learning experiences	
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>Potter N N and Hotchkiss J H (2007), Food Science, CBS Publishers and Distributors New Delhi</li> <li>Maria Parloa (2009), canned fruit, preserves and jellies: Household methods of preparation, US Department of Agriculture, Washington.</li> <li>Shafiur, Rahman, M. (2007), Handbook of Food Preservation, 2 nd edition, CRC press, New Delhi.</li> <li>Sivsankar B (2007) Food Processing And Preservation, Prentice Hall India Learning Private Limited</li> <li>Srivastava R.P. (2012), Fruit and vegetable preservation – Principles and Practices, International Book Distributing Co., (IBDC), New Delhi.</li> </ol>	

<b>Course Outcomes:</b>	At the end of this course the learner will be able to:
	1. Apply the principles of preservation behind every method of preservation
	2. Describe the stages of sugar cookery, quality of pectin and acidity in the development of preserved food products
	3. Explain the principles of preservation in fruits and vegetables-based products
	4. Prepare preserved products and develop new products with good retention of quality.



**Semester IV****Name of the Programme : B.Sc. Home Science****Course Code : HSF-202****Title of the Course : Basic Dietetics****Number of Credits : 3T+1P****Effective from AY : 2024-2025**

<b>Pre-requisites for the Course:</b>	HSF-200 Nutrition Science	
<b>Course Objectives:</b>	<ol style="list-style-type: none"> <li>1. Understand the concepts and principles of nutrition in basic dietetics.</li> <li>2. Develop the ability to plan and prepare diets for therapeutic conditions.</li> <li>3. Apply knowledge of ethical practice in medical nutrition therapy.</li> </ol>	
<b>Content:</b>		<b>No of Hours</b>
	<b>Unit I</b> Concepts in Basic Dietetics. Nutritional Assessment Nutritional care process. Modified hospital diets: i. Consistency and texture modifications ii. Nutrient modifications. Routine hospital diets - Regular diet, light diet, full liquid and tube feeding and its types. Food and Nutritional labelling, Role of dietician: The hospital & community.	<b>15</b>
	<b>UNIT II</b> Feeding the patients - Psychology of feeding the patient, assessment of patient needs. Customized Diet Plans: Tailoring Nutrition for Individual Needs , Ethical and Cultural Considerations in Patient Nutrition Feeding infants & children - problems in feeding children in hospitals.	<b>5</b>
	<b>UNIT III</b> Modification of diet - Febrile conditions, infections and surgical conditions. Diets for gastro - intestinal disorders, constipation, diarrhea, peptic ulcer. Diet for renal diseases - Nephritis, Nephrotic syndrome and renal failure. Diet for obesity, Hypertension and Cardiovascular disorders. Diet for Diabetes mellitus. Diet for Liver diseases; Fatty Liver Disease (NAFLD), Hepatitis, Cirrhosis of the Liver	<b>20</b>
	<b>UNIT IV</b> Modification of diet in special conditions :Nutrition in cancer Nutrition in Immune system dysfunction, AIDS & Allergy Nutrition support in metabolic disorders and deficiency diseases. Nutrition in burns and surgery.	<b>5</b>
	<b>Practical</b> <ol style="list-style-type: none"> <li>1. Standardization of common food preparations.               <ol style="list-style-type: none"> <li>a) Beverages</li> <li>b) Cereals and Pulses:</li> <li>c) Vegetables dishes</li> <li>d) Green leafy vegetables, coloured vegetables, roots tubers,</li> <li>e) Milk and milk products Meat products,</li> <li>f) Fish and poultry preparations</li> <li>g) Egg preparations</li> <li>h) Soups</li> <li>i) Baked products:</li> <li>j) Snacks</li> <li>k) Salads.</li> <li>l) Fermented products:</li> </ol> </li> <li>2. Planning, preparation and calculation of following diets:</li> </ol>	<b>30</b>

	<ul style="list-style-type: none"> <li>a) Normal diet.</li> <li>b) Liquid diet</li> <li>c) Soft diet</li> <li>d) High and low caloric diet</li> <li>e) Bland diet for peptic ulcer</li> <li>f) Diet for Viral hepatitis and cirrhosis</li> <li>g) Diet for Diabetes mellitus</li> <li>h) Diet for Hypertension and Atherosclerosis</li> <li>i) Diet for Nephritis and Nephrotic syndrome</li> <li>j) Low and medium cost diets for P.E.M., Anemia &amp; vitamin A deficiency</li> </ul>	
<b>Pedagogy</b>	Regular lectures, Field visits, Group discussion, debates, ICT enabled learning experiences,	
<b>References</b>	<ol style="list-style-type: none"> <li>1. Agarwal, A., &amp; Udipi, S. A. (2014). <i>Textbook of Human Nutrition</i> (1st ed.). Jaypee Brothers Medical Publishers (P) LTD.</li> <li>2. Bamji MS, Krishnaswamy K, Brahmam GNV (2009). <i>Textbook of Human Nutrition</i>, 3<sup>rd</sup> edition. Oxford and IBH Publishing Co. Pvt. Ltd.</li> <li>3. Gopalan C, Rama Sastri BV, Balasubramanian S C (1989) <i>Nutritive Value of Indian Foods</i>. National Institute of Nutrition, ICMR, Hyderabad.</li> <li>4. Khanna K, Gupta S, Passi SJ, Seth R, Mahna R, Puri S (2013). <i>Textbook of Nutrition and Dietetics</i>. Phoenix Publishing House.</li> <li>5. National Institute of Nutrition, ICMR. (2011). <i>Dietary Guidelines for Indians - A Manual</i>. NIN, ICMR, Hyderabad.</li> <li>6. Seth V and Singh K (2005). <i>Diet Planning through the Life Cycle: Part 1 Normal Nutrition. A Practical Manual</i>. Elite Publishing House Pvt. Ltd. New Delhi.</li> <li>7. Srilakshmi, B. (2014). <i>Dietetics</i> (7th ed.). New Age International (P) Limited, Publishers, New Delhi.</li> <li>8. <u>Venkaiah K</u>, <u>Bhaskarachary K</u>, <u>Longvah T</u>, <u>Anantan. R</u> (2017) <i>Indian Food Composition Tables</i>. National Institute of Nutrition, ICMR, Hyderabad.</li> <li>9. Wardlaw GM, Hampl JS, Di Silvestro RA (2004). <i>Perspectives in Nutrition</i>, 6<sup>th</sup> edition. McGraw Hill.</li> </ol>	
<b>Course Outcome</b>	<p>At the end of this course the learner will be able to:</p> <ol style="list-style-type: none"> <li>1. Define key concepts in basic dietetics, nutritional assessment, and the nutritional care process, as well as the role of dietitians in hospital and community settings.</li> <li>2. Explain key principles of nutritional assessment, the nutritional care process, and the role of dietitians in hospital and community settings.</li> <li>3. Develop and implement customized diet plans for patients with a range of medical conditions, including gastrointestinal, renal, cardiovascular, and metabolic disorders.</li> <li>4. Tailor diets for patients with specific needs such as infections, surgical recovery, obesity, diabetes, cancer, and immune dysfunctions.</li> <li>5. Assess the nutritional needs of diverse populations (e.g., children, elderly, critically ill) and evaluate the effectiveness of diet modifications in clinical settings.</li> <li>6. Create appropriate, evidence-based nutrition strategies to support patient recovery, health management, and well-being in both hospital and community contexts.</li> </ol>	

**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSF-203  
**Title of the Course** : Nutrition and Physical Fitness  
**Number of Credits** : 3T+1P  
**Effective from AY** : 2023-24

<b>Pre-requisites for the Course:</b>	HSF-200 Nutrition Science	
<b>Course Objectives:</b>	1. Understand the Importance of Nutrition, Fitness and Health 2. Gain Knowledge on Exercise Physiology and Nutrition for Physical Activity 3. Comprehend the Technique and Gadgets for Physical Activity Training 4. Understand the Risks of Hypokinetic Diseases 5. Understand the principles of Exercise and Stress Management	
		<b>No. of Hours</b>
<b>Content</b>	<b>Unit-I. Health and Fitness</b> Definition, Components and Relationship among Physical Fitness, Wellness and Health, Personalized approach Benefits of fitness training	<b>5</b>
	<b>Unit-II. Exercise Physiology and Nutrition for Physical Activity</b> Pulmonary ,Cardiovascular Regulation and integration, Skeletal and neural control, Endocrines and exercise ,Nutrition & Physical performance, Physical fitness: cardio respiratory fitness, muscular strength, muscular endurance, body composition and flexibility ,Energy systems, muscles and physical performance-ATP-CP energy systems, Lactic Acid energy systems, Oxygen energy systems, Glycogen depletion, Endurance Training-Muscle and Muscle fibers ,Optimal Nutrition and Energy needs for optimum performance e.g. athletes ,Exercise and fluid loss , Hydration, Nutrition supplements, Ergogenic Aids	<b>10</b>
	<b>Unit-III.Physical Activity Training</b> Aerobic and anaerobic training -To enhance Cardio Vascular Endurance, Flexibility and Body Composition, Measurement of PAL, Benefits of Fitness training and Gadgets for measuring PA – Motorized Treadmill, (aerobic Fitness), Functional Trainer, Fluid Rower (Upper body), Elliptical Bicycle and Bicycle Ergometer (Lower body), Stretch Trainer (Whole body),Multi Gym (9, 12, 16 station) for different muscle groups	<b>10</b>
	<b>Unit-IV.Diseases due to Faulty/Poor Food Habits and Physical Inactivity</b> Life Style related diseases/disorders (Non communicable Disease conditions) – Meaning, Causative Factors and Diet Modification/evidence-based guidelines for Underweight, Obesity, Diabetes mellitus, Hypertension, Cancer, Cardiovascular Disease, Anemia	<b>10</b>
	<b>Unit-V. Exercise, Stress and Health Management</b> Stress Assessment and Management, Techniques-Exercise at medium and high altitudes, Underweight, Overweight and Obesity, Relaxation Techniques, Yoga and Meditation for Health, Clinical Exercise, Physiology for Cancer, CV and Pulmonary rehabilitation	<b>10</b>
	<b>Practical</b> 1. Aerobic and Anaerobic Exercises 2. Relaxation Techniques, 3. Yoga and Meditation 4. Visit to Fitness Centre: Observational report and 2 Case studies 5. Survey and review of ergogenic aids available in the market 6. Use of non-invasive equipment's like Pedometer, pulse oximeter, step test, Omrons body composition analyser, home monitoring BP equipment to assess the nutritional status	<b>30</b>

	7. Diet plans for sports activities	
<b>Pedagogy:</b>	Regular lectures, demonstrations, ICT enabled teaching and learning experiences, seminars and assignments	
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Aggarwal, B.V., Gupta, V.S. (2002) <i>Handbook of Journalism and Mass Communication</i> Concept Publishing Company, New Delhi</li> <li>2. Kotler Philip, Roberto Eduardo L .(1989). <i>Social marketing: Strategies for Changing Public Behaviour</i>. Free Press , New York, 1989</li> <li>3. Kotler, Philip, Andreasen Alan (1987). <i>R Strategic Marketing for non-profit Organizations</i>. Englewood cliffs, New Jersey, Prentice Hall Inc.</li> <li>4. Jena, B., Pati R.(1986) <i>Health and family Welfare Services in India</i>. Ashish, New Delhi</li> <li>5. Maitra, T., (1985). <i>Public Services in India</i>. Mittal , New Delhi</li> </ol>	
<b>Course Outcomes</b>	<p>At the end of this course the learner will be able to:</p> <ol style="list-style-type: none"> <li>1. Define the components of physical fitness and wellness, and explain their relationships to health.</li> <li>2. Recognize the benefits of a personalized fitness training approach for improving overall well-being.</li> <li>3. Apply knowledge of exercise physiology (cardiovascular, pulmonary, skeletal, neural, and endocrine systems) to optimize physical performance.</li> <li>4. Understand the role of nutrition, hydration, and ergogenic aids in enhancing athletic performance, muscle function, and energy systems.</li> <li>5. Analyze different training modalities (aerobic, anaerobic, flexibility, strength) and evaluate the effectiveness of fitness gadgets and tools for measuring physical activity and fitness progress (e.g., treadmill, elliptical, multi-gym, pedometers).</li> <li>6. Design evidence-based dietary and lifestyle modifications for preventing or managing lifestyle-related diseases such as obesity, diabetes, hypertension, cardiovascular diseases, and cancer, based on the understanding of causative factors and nutrition guidelines.</li> <li>7. Assess the effects of stress on physical health and apply appropriate management techniques, including exercise, relaxation, yoga, and meditation.</li> <li>8. Understand the clinical applications of exercise physiology in stress management and rehabilitation for conditions like cancer, cardiovascular, and pulmonary diseases.</li> <li>9. Implement aerobic and anaerobic exercises, relaxation techniques, and yoga routines to improve fitness and manage stress.</li> <li>10. Develop personalized diet plans for athletes and fitness enthusiasts, incorporating knowledge of ergogenic aids and nutritional needs.</li> <li>11. Use and Interpret Fitness and Health Monitoring Tools :</li> <li>12. Use non-invasive equipment (e.g., pedometer, pulse oximeter, body composition analyzers, BP monitors) to assess fitness, nutritional status, and overall health.</li> </ol>	

**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSF-204  
**Title of the Course** : Nutritional Biochemistry  
**Number of Credits** : 3T+1P  
**Effective from AY** : 2024-2025

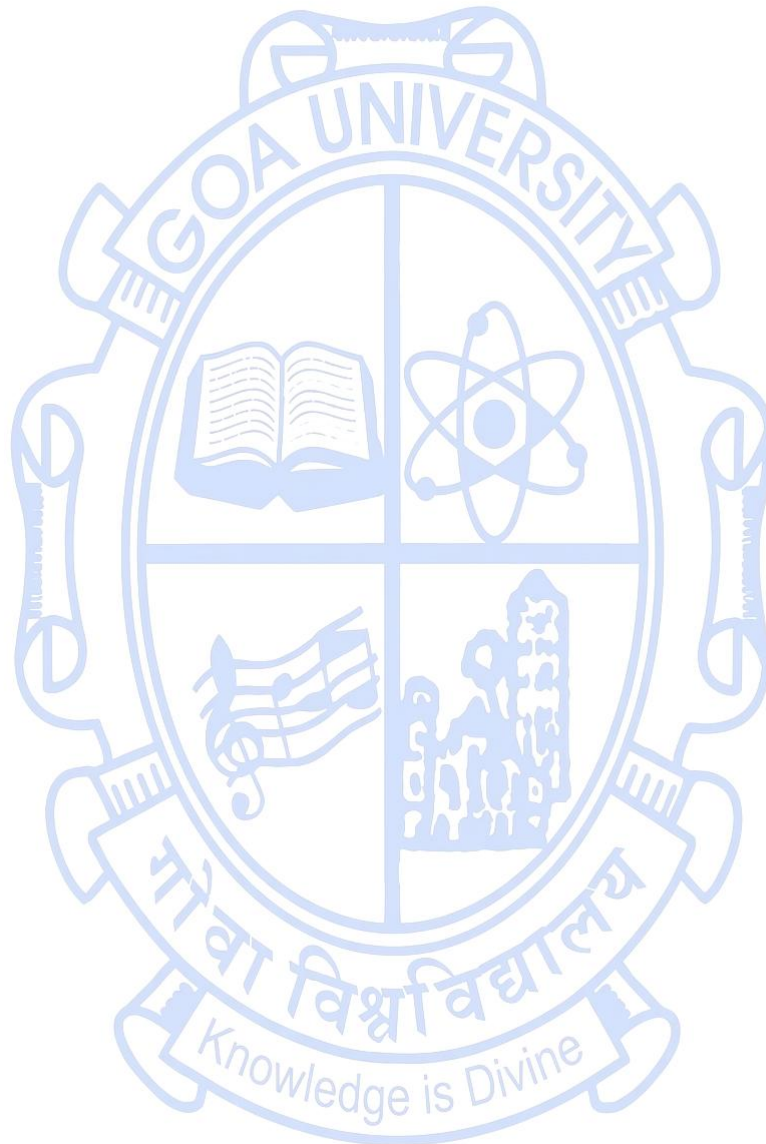
<b>Pre-requisites for the Course:</b>	HSF-200 Nutrition Science (3T+1P)	
<b>Course Objectives:</b>	1. To Understand the composition and structures of the biomolecules 2. Know the fundamentals of metabolic processes / pathways occurring in the body. 3. Understand the significance of various metabolic processes / pathways	
<b>Content:</b>		<b>No of Hours</b>
	<b>UNIT I</b> 1. Introduction to Biochemistry – Definition, objectives, inter-relationship between biochemistry and other biological sciences. 2. Enzymes – Definition, classification, different types of coenzymes, specificity of enzymes, factors affecting enzyme activity, enzyme kinetics, cofactors, enzyme inhibition (competitive and noncompetitive). Vitamins as Coenzymes Hormones: Definition, Nomenclature & classification. • Mechanism of hormone action.	<b>8</b>
	<b>Unit - II.</b> Carbohydrates – Definition, classification, structure and properties of: - Monosaccharides – glucose, fructose, galactose. Disaccharides – Maltose, lactose, sucrose Polysaccharides – Homopolysaccharides (Starch, glycogen, Cellulose) and heteropolysaccharides Metabolic pathway: Glycolysis and gluconeogenesis, glycogenesis, glycogenolysis. TCA cycle, E.T.C., Oxidative phosphorylation	<b>15</b>
	<b>Unit – III</b> Proteins – Definition, classification, structure and properties. Amino acids and their types, structure. General metabolic reactions of amino acids metabolism (transamino oxidative deamination, decarboxylation) Urea cycle	<b>10</b>
	<b>Unit IV</b> Lipids and Nucleic acids Lipids – Definition, classification and composition of lipids, Lipids – $\beta$ oxidation and biosynthesis of fatty acids Ketone body formation, Ketosis, fatty livers Nucleic acids, types , composition ( Nucleosides and Nucleotides), Structure of DNA & RNA. . Elementary knowledge of biosynthesis of proteins	<b>12</b>
	<b>PRACTICAL</b> 1. Carbohydrates Qualitative tests for monosaccharides, disaccharides and polysaccharides 2. Identification in unknown mixtures 3. Quantitative estimation of glucose, sucrose and lactose by titrimetric method 4. Estimation of Acid value, Iodine Value and Peroxide value 5. Quantitative Estimation in Serum / Blood/ Urine a. Urea and. Uric acid in urine b. Total protein in Serum. Albumin, Globulin, A/G Ratio. Blood Glucose	<b>30</b>

	Serum Cholesterol Hemoglobin	
<b>Pedagogy</b>	Regular lectures, Group discussion, ICT enabled learning experiences, Evaluation of class tests, seminars and assignments and Record works related to their Practical works.	
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Berg J.M. Tymoczko J.L., and Stryer. L. "Biochemistry", 5th edition, (2002). W.H. Freeman.</li> <li>2. Chatterjee M.N., Shinde R. "Textbook of Medical Biochemistry" 8th Edition (2012) Jaypee Brothers, Medical Publishers.</li> <li>3. Jain, J, L., S. Jain and N. Jain (2005) "Fundamentals of Biochemistry". 6th Edition, S. Chand Company Ltd.</li> <li>4. Murray Harper's Illustrated Biochemistry" 29th Edition, (2012) Prentice Hall Int.</li> <li>5. Nelson DL &amp; Cox MM. 5th Edition, (2009). "Lehninger's Principles of Biochemistry". Freeman and Co.</li> <li>6. Rastogi S.C. (2003) , 2nd Edition "Biochemistry" , , Tata MacGraw Hill Publishing Co. Ltd., New Delhi</li> <li>7. Satyanarayana U and Chakrapani U "Biochemistry", 3rd Edition, (2008), Books &amp; Allied Publishers.</li> <li>8. Vasudevan D.M. and Sreekumari S – (2007) "Textbook of Biochemistry for Medical Students". 5 th Edition, Jaypee Brothers, Medical Publishers.</li> </ol>	
<b>Course Outcomes</b>	<p>At the end of this course the learner will be able to:</p> <ol style="list-style-type: none"> <li>1. Define key biochemical terms (biochemistry, enzymes, hormones, vitamins, carbohydrates, proteins, lipids, nucleic acids).</li> <li>2. List the classification and structure of biomolecules (e.g., carbohydrates, proteins, lipids, nucleic acids).</li> <li>3. Describe enzyme activity, coenzyme roles, and metabolic processes like glycolysis, TCA cycle, and protein synthesis.</li> <li>4. Understand the mechanisms of hormone action and regulation.</li> <li>5. Use knowledge of enzyme kinetics, coenzymes, and metabolic pathways to explain biochemical reactions.</li> <li>6. Demonstrate the application of metabolic pathways (glycolysis, gluconeogenesis, urea cycle, fatty acid oxidation) in maintaining cellular function and energy balance.</li> <li>7. Interpret the interconnection between metabolic pathways like glycolysis, TCA cycle, and oxidative phosphorylation.</li> <li>8. Assess the impact of metabolic disorders (e.g., ketosis, fatty liver) on biochemical pathways.</li> <li>9. Evaluate the role of enzymes and hormones in regulating metabolic homeostasis.</li> </ol>	

**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSF-205  
**Title of the Course** : Nutrition Communication and Counselling  
**Number of Credits** : 1T +1 P  
**Effective from AY** : 2024-2025

<b>Pre-requisites for the Course:</b>	HSF-200 Nutrition Science (3T+1P)	
<b>Course Objectives:</b>	<ol style="list-style-type: none"> <li>1. Understand the principles and procedures of nutrition counseling and the role of the counselor.</li> <li>2. Develop an understanding how, lifestyles influence health and well-being.</li> <li>3. Be familiar with various techniques used in counseling.</li> <li>4. Be able to use various types and techniques of counseling to motivate patients to achieve well-being</li> </ol>	
		<b>No of Hours</b>
<b>Content:</b>	<b>UNIT I</b> Introduction to Nutrition Communication, Communication Skills: Verbal communication Effective presentation skills power point, google slides and keynotes, non-verbal communication skills. Communication for development.	<b>4</b>
	<b>UNIT II</b> Counselling – Definition, Expectations, goals, scope and limits. Counsellor – Characteristics of an effective counselor The Client – Characteristics, expectations The Counselling Process: Techniques for obtaining relevant information, Clinical Information, Medical History and General Profile, Dietary Diagnosis ,Assessing food and nutrient intakes ,Lifestyles, physical activity, stress	<b>5</b>
	<b>UNIT III</b> Counselling Theories and Approaches: Key Concepts and Techniques, Counselling techniques, strategies and communication skills, Rapport building and opening techniques, Questioning, listening, reflecting, acceptance, silence, leading reassurance, non-verbal behavior, terminating skills. Group Counselling	<b>6</b>
	<b>Practical</b> Developing resources and aids for education and counseling (adjusting and adopting to individual needs) <ol style="list-style-type: none"> <li>1. Hospitalized patients</li> <li>2. Adults,</li> <li>3. Pediatric,</li> <li>4. Elderly,</li> <li>5. Differently abled,</li> </ol> <ol style="list-style-type: none"> <li>2. Nutrition communication to Outpatients               <ol style="list-style-type: none"> <li>1. Hospitalized patients</li> <li>2. Adults</li> <li>3. Pediatric</li> <li>4. Elderly</li> <li>5. Differently abled</li> <li>6. Community</li> </ol> </li> </ol>	<b>30</b>
<b>Pedagogy</b>	Regular lectures, Field visits, Group discussion, debates,ICT enabled learning experiences,Analyzing evaluating You tube videos	
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Gelso, C.J., Fretz, B.R.(1995). Counselling Psychology, Bangalore, Prism Books Pvt Ltd.</li> <li>2. Gibson, R.L., Mitchell, M.H.(2005). Introduction to counselling and guidance (6th Ed)</li> <li>3. Mahan L K and Escott Stump S (2013). Krause’s Food &amp; Nutrition Therapy, 13th ed. Saunders-Elsevier.</li> </ol>	

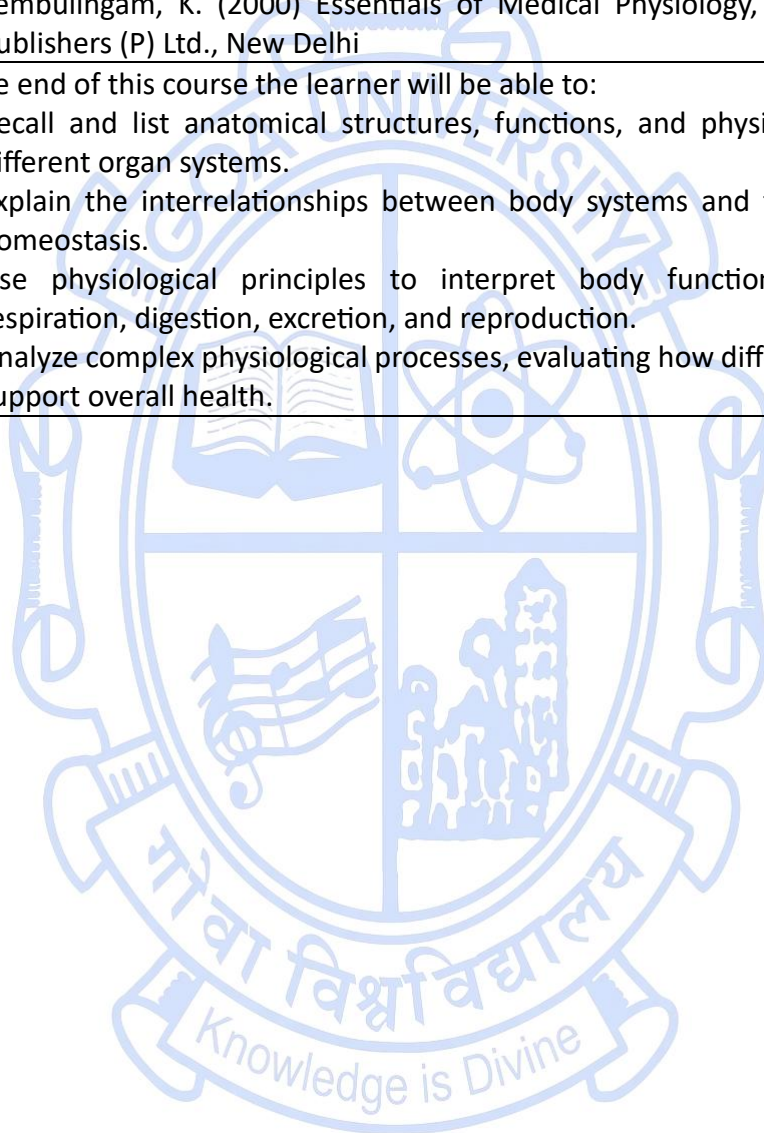
	<p>4. Sharma, T.C.(2002). Modern Methods of Guidance and Counseling, New Delhi, sarup&amp; sons</p> <p>5. Stacy Nix (2009). William’s Basic Nutrition and Diet Therapy, 13th Edition. Elsevier Mos</p>
<b>Course Outcomes</b>	<p>At the end of this course the learner will be able to:</p> <ol style="list-style-type: none"> <li>1. Define key concepts in nutrition communication and counselling.</li> <li>2. Explain the theories, techniques, and roles involved in nutrition counselling.</li> <li>3. Implement communication skills and counselling techniques in various real-world scenarios.</li> <li>4. Evaluate and adapt strategies to meet the needs of diverse client populations, improving counselling effectiveness.</li> </ol>



**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSF-221  
**Title of the Course** : Human Anatomy and Physiology  
**Number of Credits** : 3T+1P  
**Effective from AY** : 2024-25

<b>Pre-requisites for the Course:</b>	HSF-200 Nutrition Science (3T+1P)	
<b>Course Objectives:</b>	<ol style="list-style-type: none"> <li>1. Obtain an insight into the structure and functions of cells, tissues and organs in human body</li> <li>2. Understand the anatomy and physiology of the various systems in the human body</li> <li>3. Comprehend the functions of systems of the human body</li> <li>4. Gain knowledge on Endocrine, Nervous and Reproductive System</li> </ol>	
<b>Content:</b>		<b>No of hours</b>
	<b>Unit-I. Introduction to Human Body</b> Basic concepts of Organs, tissue and cell, Cell structure, cellular organelle and their functions, Blood- Composition, blood groups and functions	<b>7</b>
	<b>Unit-II. Cardiovascular System and Respiratory Systems</b> <b>Cardiovascular System-</b> Structure and functions of heart, Properties of Cardiac Muscle and Functional Tissues, Cardiac Cycle, Heart Rate, Cardiac Output, Blood Pressure (Systolic & Diastolic), ECG <b>Respiratory System</b> Physiological Anatomy of Respiratory Tract, Mechanism of Respiration, Transport of Respiratory Gases in Blood, Gaseous Exchange in Lungs and tissues.	<b>8</b>
	<b>Unit-III. Digestive System and Excretory System</b> <b>Digestive System</b> Principal organs of the digestive system – Mouth, tongue, Teeth, Esophagus, Stomach, Small Intestine, Large Intestine, Rectum, Anus- structure & function, Principal accessory organs- salivary glands, liver, gall bladder, pancreas- structure & function, Role of gut hormones & enzymes in Digestion and mechanisms involved in absorption of food. <b>Excretory System</b> Structure of Excretory System- Kidney, Nephron, Urinary Bladder , Urine Formation, Composition of Urine, micturition, Glomerular Filtration Rate (GFR)	<b>8</b>
	<b>Unit-IV. Endocrine System and Nervous System</b> Introduction to Endocrinology, Functions and Hormones secreted by Pituitary Gland, Thyroid Gland and Parathyroid Gland and Adrenal Gland , Sex glands, Endocrine Functions of Pancreas <b>Nervous System</b> Structure and functions of Neuron, Brain and Central nervous system (Autonomic Nervous System, Parasympathetic Nervous System)	<b>6</b>
	<b>Unit-V. Reproductive System</b> Structure, hormones secreted and functions of Male and Female Reproductive Organs; Physiology of Menstruation - estrogen verses progesterone; Pregnancy and associated changes, Physiology of lactation.	<b>8</b>
	<b>Practical</b> <ol style="list-style-type: none"> <li>1. Microscope and its uses</li> <li>2. Study of epithelial, connective, muscular and nervous tissues.</li> <li>3. RBC and WBC count</li> <li>4. Determination of pulse rate in resting condition and after exercise (30 beats/10 beats method)</li> <li>5. Determination of blood pressure by Sphygmomanometer (Auscultator method).</li> <li>6. Measurement of Peak Expiratory flow rate.</li> </ol>	<b>30</b>

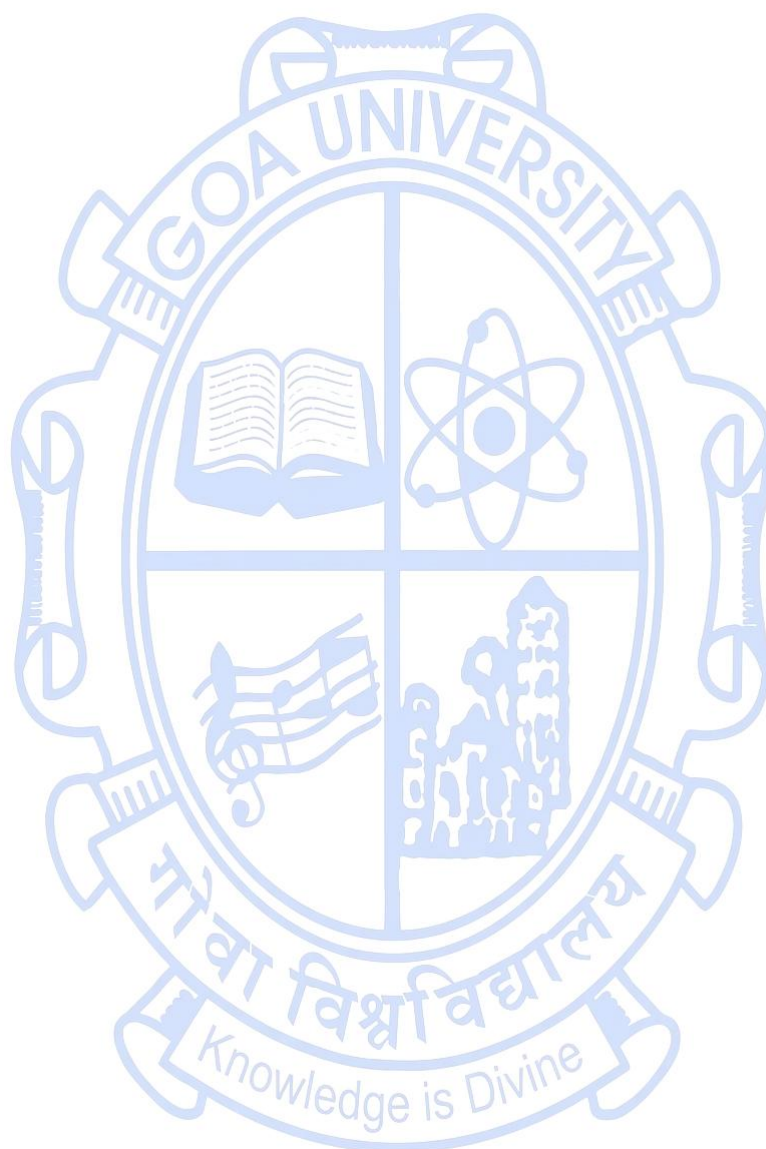
	<p>7. Determination of Bleeding Time (BT) and Coagulation Time (CT).</p> <p>8. Detection of Blood group</p> <p>9. Measurement of Hemoglobin level</p>	
<b>Pedagogy:</b>	Regular lectures, demonstrations, Exercises on observation and follow up with group discussions, case studies, ICT enabled teaching and learning experiences in terms of video lessons and documentary film shows.	
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Chatterjee C.C (2004), Human Physiology Volume II, Medical Allied Agency, Kolkata.</li> <li>2. Chatterjee C.C (2016), Human Physiology Volume I, Medical Allied Agency, Kolkata</li> <li>3. Chaudhri, K. (1993) Concise Medical Physiology, New Central Book Agency (Parental) Ltd., Calcutta</li> <li>4. Kathleen J. W. Wilson, Anne Waugh, Allison Grant. Ross and Wilson Anatomy (2014), Physiology in Health and Illness. 12th Edition, Elsevier Publication, New Delhi</li> <li>5. Sembulingam, K. (2000) Essentials of Medical Physiology, Jaypee Brothers Medical Publishers (P) Ltd., New Delhi</li> </ol>	
<b>Course Outcomes:</b>	<p>At the end of this course the learner will be able to:</p> <ol style="list-style-type: none"> <li>1. Recall and list anatomical structures, functions, and physiological processes across different organ systems.</li> <li>2. Explain the interrelationships between body systems and their roles in maintaining homeostasis.</li> <li>3. Use physiological principles to interpret body functions, including circulation, respiration, digestion, excretion, and reproduction.</li> <li>4. Analyze complex physiological processes, evaluating how different systems interact and support overall health.</li> </ol>	



**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSF-222  
**Title of the Course** : Food Product Development  
**Number of Credits** : 3T +1P  
**Effective from AY** : 2024-2025

<b>Pre-requisites for the Course:</b>	HSC-100 Food Science	
<b>Course Objectives:</b>	To enable the students 1. To understand and know various aspects of food product develop food science and technology, packaging, nutrition values and marketing. 2. To recognize the potential for entrepreneurship through marketing.	
<b>Content:</b>		<b>No of Hours</b>
	<b>UNIT-I New product development</b> Definition and classification, characterization and factors shaping new product development. Food needs and consumer preference –needs and types of food consumption Trends, economic, psychological, anthropological and sociological dimensions of food consumption. Trends in social changes and its role in diet pattern-consumer research Health concerns impact of technology and market place influence.	<b>9</b>
	<b>UNIT-II Designing new products using need based perspective and application in various situations the R and D process.</b> Developing standards products- Types of product and logistics, primary and secondary, various food ingredients used, use of additives.	<b>9</b>
	<b>UNIT-III Sensory evaluation Establishing sensory panels</b> Designing testing facilities – Analytical Test – Conduct a sensory Evaluation Test – Designing score card, objective evaluation, Instruments used for texture evaluation.	<b>9</b>
	<b>UNIT-IV Packaging Packaging</b> Introduction, Types of packing materials. New product development – patent, patent laws, international code for Intellectual property rights (IPR). Types and mode of transportation optimization of Transport taking into account the types of product distance storage facilities, Equipment and space.	<b>10</b>
	<b>UNIT-V Marketing Concept of market and marketing</b> Approaches to study marketing and marketing functions, market structure, market efficiency and market integration. Role of government in promoting agricultural marketing.	<b>8</b>
<b>Practical</b> 1. Formulation of new products for infants, preschool, sports person, elderly 2. Selection of raw materials, portion size, standardization methods, calculation of nutritive values, cost production, shelf life. 3. Packaging and Nutritional labelling. 4. Marketing and Advertising	<b>30</b>	
<b>Pedagogy</b>	Regular lectures, Field visits, Group discussion, debates, ICT enabled learning experiences,	
<b>References/ Readings:</b>	1. Aaron, L. Brody, Joha. B. Lord. Developing New Food Product for a changing Market place, 2nd Edition, 2005, 5. 2. Acharya S. S. and N.L, Agarwal Agricultural Marketing in India – Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi, 1992. 3. Baker, R.C., Fundamentals of New Food Product Development,1988. 4. Fuller G.W, New Food Product Development from Concept to Market place. 5. Sivarama Prasad A. Agricultural marketing in India, Mittal Publication, New Delhi, 1985.	

<b>Course Outcomes</b>	<p>At the end of this course the learner will be able to:</p> <ol style="list-style-type: none"><li>1. Define and recall key concepts in food product development, sensory evaluation, packaging, and marketing.</li><li>2. Explain the processes, factors, and roles involved in developing food products, conducting sensory tests, and marketing food innovations.</li><li>3. Implement knowledge of R&amp;D, sensory evaluation, packaging, and marketing to develop, assess, and promote new food products.</li><li>4. Evaluate trends, test results, packaging strategies, and market conditions to optimize food product development and marketing efforts.</li></ol>
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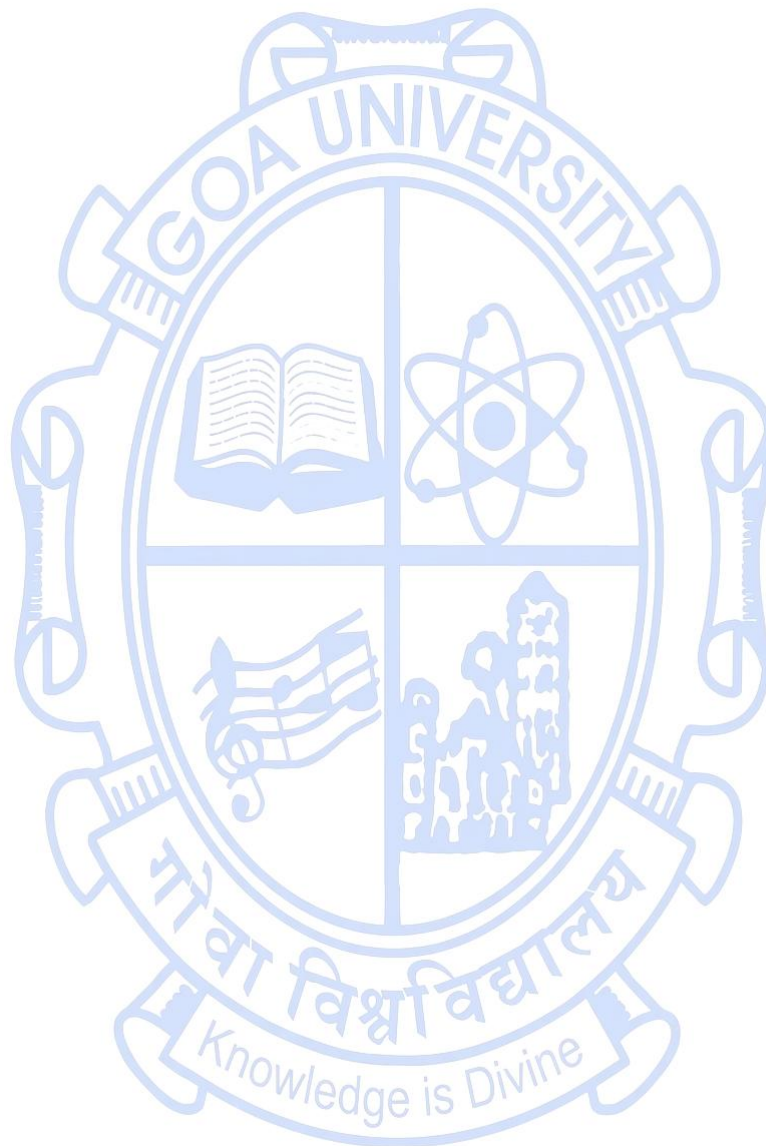
**Semester V**

**Name of the Programme : B.Sc. Home Science**  
**Course Code : HSF-300**  
**Title of the Course : Medical Nutrition Therapy I**  
**Number of Credits : 3T +1P**  
**Effective from AY : 2025-2026**

<b>Pre-requisites for the Course:</b>	SY BSc Home Science with Food , Nutrition And Dietetics specialization	
<b>Course Objectives:</b>	<ol style="list-style-type: none"> <li>1. Understand the role of a dietitian and to maintain good nutritional status, correct deficiencies or disease conditions of the patients</li> <li>2. Gain knowledge on the principles of diet therapy and designing or formulating different therapeutic diets for various disease conditions</li> <li>3. Develop the skill to plan and prepare therapeutic diets for the prevention of disease conditions.</li> <li>4. Understand the causes and symptoms of deficiency disorders.</li> </ol>	
<b>Content:</b>		<b>No of Hours</b>
	<b>Unit I: Foundations of Diet Therapy</b> <ul style="list-style-type: none"> <li>• Growth, Scope, and Evolution of Dietetics</li> <li>• Purpose and Principles of Therapeutic Nutrition</li> <li>• Modifications of Normal Diets: Texture, Consistency, and Nutrient Composition</li> <li>• Classification of Therapeutic Diets</li> <li>• Role and Characteristics of a Dietitian in Clinical Settings</li> <li>• Diet Counseling: Approaches, Tools, and Ethics</li> <li>• Team Approach in Nutritional Care</li> <li>• Principles of Food Prescription and Menu Planning</li> <li>• Role of the Indian Dietetic Association (IDA)</li> <li>• Computer-Assisted Diet Planning (CAI)</li> <li>• Use of Digital and Telehealth Technologies in Diet Counseling</li> </ul>	<b>8</b>
	<b>Unit II: Medical Nutrition Therapy for Obesity, Underweight, and Anemia</b> <ul style="list-style-type: none"> <li>• Etiology, Pathophysiology, and Clinical Manifestations</li> <li>• Assessment Techniques: Anthropometry, Biochemical, Clinical, and Dietary</li> <li>• Nutritional Management and Lifestyle Guidelines for:                             <ul style="list-style-type: none"> <li>○ Obesity and Underweight</li> <li>○ Anemia: Iron, B12, and Folate Deficiency</li> </ul> </li> <li>• Bariatric Surgery: Types, Nutritional Implications, and Post-surgical Dietary Management</li> </ul>	<b>10</b>
	<b>Unit III: Medical Nutrition Therapy in Endocrine Disorders</b> <ul style="list-style-type: none"> <li>• <b>Diabetes Mellitus:</b> <ul style="list-style-type: none"> <li>○ Types (Type 1, Type 2, Gestational), Risk Factors, and Complications</li> <li>○ Nutritional Management and Diet Planning</li> <li>○ Carbohydrate Counting, Glycemic Index and Load</li> <li>○ Use of Insulin and Oral Hypoglycemic Agents</li> </ul> </li> <li>• <b>Thyroid Disorders:</b> <ul style="list-style-type: none"> <li>○ Hypothyroidism and Hyperthyroidism</li> <li>○ Dietary Guidelines and Nutrient Considerations</li> </ul> </li> </ul>	<b>10</b>
	<b>Unit IV: Medical Nutrition Therapy in Gastrointestinal Disorders</b> <ul style="list-style-type: none"> <li>• Etiology, Symptoms, and Dietary Modifications for:                             <ul style="list-style-type: none"> <li>○ Diarrhea, Constipation, Dysentery</li> <li>○ Peptic Ulcer, Gastritis, Dumping Syndrome</li> <li>○ Irritable Bowel Syndrome (IBS)</li> <li>○ Ulcerative Colitis</li> </ul> </li> </ul>	<b>10</b>

	<ul style="list-style-type: none"> <li>○ Celiac Disease and Gluten-Free Diets</li> <li>● Nutritional Assessment and Lifestyle Interventions</li> </ul>	
	<p><b>Unit V: Medical Nutrition Therapy in Hepatobiliary and Pancreatic Disorders</b></p> <ul style="list-style-type: none"> <li>● Conditions: Jaundice, Hepatitis, Cirrhosis, Fatty Liver, Hepatic Coma</li> <li>● Disorders of Gallbladder and Pancreas: <ul style="list-style-type: none"> <li>○ Cholelithiasis, Cholecystitis, Pancreatitis</li> </ul> </li> <li>● Metabolic Alterations and Nutritional Management Strategies</li> </ul>	<b>7</b>
	<p><b>Practical</b> - Planning and Preparation of the following</p> <ol style="list-style-type: none"> <li>1. Hospital Diets- Modification of diet with respect to texture, consistency and nutrients</li> <li>2. Modification of Diets in Obesity</li> <li>3. Modification of Diets in Underweight</li> <li>4. Modification of Diets in Diabetes Mellitus</li> <li>5. Modification of Diets in Peptic Ulcer, IBS and Diarrhoea</li> <li>6. Modifications of Diets in Liver Diseases – Jaundice, Hepatitis and Cirrhosis</li> </ol>	<b>30</b>
<b>Pedagogy</b>	<ul style="list-style-type: none"> <li>● Regular lectures, Field visits, Group discussion</li> <li>● ICT enabled learning experiences</li> </ul>	
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Brown, J (2014). <i>Nutrition now</i> (7<sup>th</sup>ed). Wadsworth, USA, ISBN- 13:978-1-133-93653-4, ISBN10:1-133-93653-9</li> <li>2. C. Gopalan, B. V. Ramashastry and S. C. Balasubramanian (2004): <i>Nutritive Value of Indian Foods</i>, NIN, ICMR, Hyderabad.</li> <li>3. <i>Dietary Guidelines of Indians – A Manual</i>, National Institute of Nutrition, Hyderabad, 2011.</li> <li>4. Garg, M. <i>Diet, Nutrition and Health</i>, ABD Publishers, 2006.</li> <li>5. Garrow J.S. &amp; W.P.T. James (2000): <i>Human Nutrition and Dietetics</i>, 10th Edition, Churchill Livingstone Inc.</li> <li>6. Joshi S. A. (2002): <i>Nutrition and Dietetics</i>, 2nd Edition, Tata McGraw-Hill Publishing Company Limited.</li> <li>7. Joshi S. A. (2002): <i>Nutrition and Dietetics</i>, 2nd Edition, Tata McGraw-Hill</li> <li>8. Krause, M.V. and Mahan, L.K. <i>Food, Nutrition and Diet Therapy</i>, 9<sup>th</sup> Ed., W.B. Saunders Company, Philadelphia, 2019.</li> <li>9. Maimun Nisha, <i>Diet Planning for Diseases</i>, Kalpaz Publishers, 2016.</li> <li>10. Nelms M, Sucher K (2015). <i>Nutrition Therapy and Pathophysiology</i>. (3<sup>rd</sup> edition) CengageLearning, USA. ISBN-13: 978-1305111967, ISBN-10: 1305111966</li> <li>11. Srilakshmi, B. <i>Dietetics</i>, New Age International P. Ltd., New Delhi, 2018.</li> <li>12. T. Longvah, R. Ananthan, K. Bhaskarchary and K. Venkalah (2017). <i>Indian Food Composition Tables</i>, National Institute of Nutrition (NIN), Hyderabad.</li> </ol>	
<b>Course Outcomes</b>	<p>Students will be able to</p> <ol style="list-style-type: none"> <li>1. Define fundamental concepts in diet therapy and explain the growth and scope of dietetics.</li> <li>2. Illustrate the principles of therapeutic diets and describe the role and characteristics of dietitians.</li> <li>3. Differentiate between various therapeutic diets based on their classification and application in medical nutrition therapy.</li> <li>4. Analyze the etiology, pathophysiology, and clinical symptoms of obesity, underweight, and anemia.</li> <li>5. Use dietary guidelines and nutritional principles to design diets for conditions like diabetes, thyroid disorders, and gastrointestinal diseases.</li> <li>6. Apply technology, such as Computer-Assisted Instructions, in diet planning and counseling.</li> <li>7. Assess the effectiveness of nutritional interventions in addressing specific disorders such as diabetes complications, anemia, and liver diseases.</li> </ol>	

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|  | <ol style="list-style-type: none"><li>8. Evaluate dietary and lifestyle recommendations for managing endocrine and gastrointestinal disorders.</li><li>9. Design individualized nutritional care plans using a team approach, incorporating diet counseling and food prescription principles.</li><li>10. Develop sustainable dietary modifications and strategies for specific medical conditions, integrating innovative diet planning techniques.</li></ol> |
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**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSF-301  
**Title of the Course** : **Advanced Nutrition - I**  
**Number of Credits** : 3T+1P  
**Effective from AY** : 2025-26

<b>Pre-requisites for the Course:</b>	SY BSc Home Science with Food , Nutrition And Dietetics specialization	
<b>Course Objectives:</b>	<ol style="list-style-type: none"> <li>1. Gain insight in to the physiological process of digestion, absorption of nutrients.</li> <li>2. Acquire knowledge about the functions of nutrients.</li> <li>3. Understand the implications of deficiencies and excess of the nutrients.</li> <li>4. Describe the functions of water in the body and how electrolytes and fluid balance are maintained in the human body</li> </ol>	
<b>Content:</b>		<b>No of Hours</b>
	<b>UNIT 1 History of Nutrients and Basic concepts in Nutrition</b> Eminent Scientists and developments in Nutrition Science Digestion, Absorption of macronutrients, Transport across cell membrane – active, passive, diffusion. Nutrient Requirements for Indians: Recommended Dietary Allowances and Estimated Average Requirements	<b>6</b>
	<b>UNIT 3 Water, Electrolytes and Acid-Base balance</b> Sources, functions and distribution, deficiencies of the following: Water and Electrolytes- Sodium, Potassium and Chloride, Mechanisms of water balance, electrolyte balance and Acid-Base Balance and Water Intoxication.	<b>7</b>
	<b>UNIT 4 ENERGY BALANCE</b> Forms of energy, measurement of energy, SDA, thermogenesis. BMR estimation of BMR and factors affecting BMR, Total Energy requirement	<b>6</b>
	<b>UNIT 5 CARBOHYDRATES</b> Types and functions, Sugar alcohols, Fibre - types, properties, function, role in various diseases, RDA, Effects of excess and deficiency of carbohydrates.	<b>9</b>
	<b>UNIT 6 PROTEIN</b> Classification and functions, Methods of protein quality evaluation, Amino acid imbalance, nitrogen balance, antagonism and toxicity, PEM - clinical and biochemical aspects, RDA/ EAR	<b>9</b>
	<b>UNIT 7 LIPIDS</b> Classification of lipids , Fatty acids and its types, Transport of lipids, Functions of lipids, Role of fat in cardiovascular diseases, RDA , Inter relation between carbohydrate, fat and protein in energy metabolism.	<b>8</b>
	Practical <ol style="list-style-type: none"> <li>1. Identifying food sources for all the nutrients: Protein, Carbohydrates, Fat,</li> <li>2. Planning nutrient dense recipes (Low, medium and high cost)-</li> <li>3. Energy, Carbohydrates, Dietary fibers, Proteins and Lipids. (Cooking any one recipe for each nutrient)</li> <li>4. Planning diets for PEM</li> <li>5. Calculating Amino acid score of any five nutrient dense recipes</li> <li>6. Calculation of Net Dietary Protein calorie percent (NDP Cal %) for the same</li> </ol>	<b>30</b>
<b>Pedagogy</b>	<ul style="list-style-type: none"> <li>● Regular lectures, Field visits, Group discussion, debates,</li> <li>● ICT enabled learning experiences</li> <li>● Analyzing evaluating You tube videos</li> </ul>	
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Agarwal A and Udipi SA. (2013) Text Book of Human Nutrition, Jaypee Publihers, New Delhi</li> <li>2. Bamji, M. S., Krishnaswamy, K., &amp; Brahmam, G. N. V. (2009). <i>Textbook of human nutrition</i> (3rd ed.). Oxford &amp; IBH Publishing.</li> </ol>	

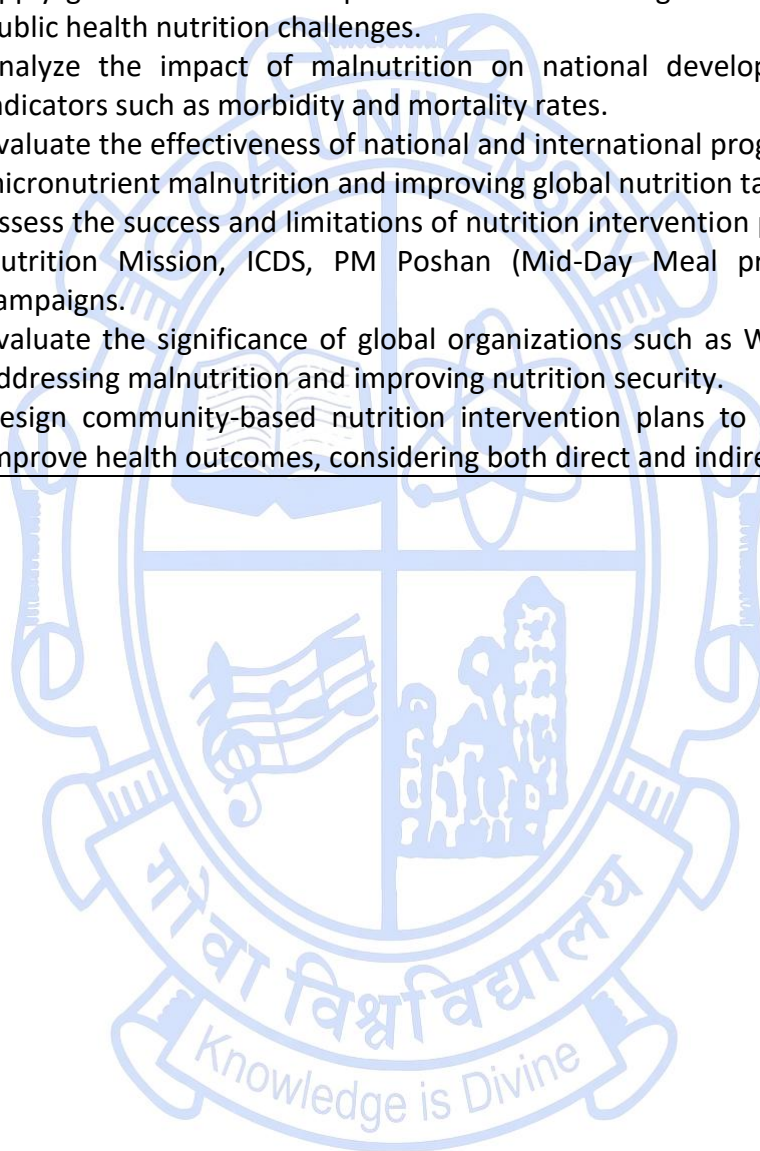
	<ol style="list-style-type: none"> <li>3. Gibney, M. J., Lanham-New, S. A., Cassidy, A., &amp; Vorster, H. H. (Eds.). (2009). <i>Introduction to human nutrition</i> (2nd ed.). Wiley-Blackwell.</li> <li>4. Gopalan, C., Sastri, B. V. R., &amp; Balasubramanian, S. C. (2012). <i>Nutritive value of Indian foods</i> (Revised ed.). National Institute of Nutrition, ICMR.</li> <li>5. Gropper, S. S., Smith, J. L., &amp; Carr, T. P. (2016). <i>Advanced nutrition and human metabolism</i> (7th ed.). Cengage Learning.</li> <li>6. Khanna, K., Gupta, S., Passi, S. J., Seth, R., Mahna, R., &amp; Puri, S. (2013). <i>Textbook of nutrition and dietetics</i>. Elite Publishing House.</li> <li>7. Longvah, T., Ananthan, R., Bhaskarachary, K., &amp; Venkaiah, K. (2017). <i>Indian food composition tables 2017</i>. National Institute of Nutrition, ICMR.</li> <li>8. Mahan, L. K., Raymond, J. L., &amp; Escott-Stump, S. (2017). <i>Krause's food &amp; the nutrition care process</i> (14th ed.). Elsevier.</li> <li>9. Mudambi, S. R., &amp; Rajagopal, M. V. (2020). <i>Fundamentals of foods, nutrition and diet therapy</i> (6th ed.). New Age International Publishers.</li> <li>10. Reddy, V., Rao, P. N., &amp; Raghunath, M. (2009). <i>Handbook of nutrition and dietetics</i>. National Institute of Nutrition, ICMR.</li> <li>11. Robinson, C. H., Lawler, M. R., Chenoweth, W. L., &amp; Garwick, A. E. (1990). <i>Normal and therapeutic nutrition</i> (17th ed.). Macmillan Publishing.</li> <li>12. Rolfes, S. R., Pinna, K., &amp; Whitney, E. (2020). <i>Understanding normal and clinical nutrition</i> (11th ed.). Cengage Learning.</li> <li>13. Smolin, L. A., &amp; Grosvenor, M. B. (2020). <i>Nutrition: Science and applications</i> (4th ed.). Wiley.</li> <li>14. Srilakshmi, B. (2018). <i>Dietetics</i> (8th ed.). New Age International Publishers.</li> <li>15. Wardlaw, G. M., &amp; Smith, A. M. (2019). <i>Contemporary nutrition: A functional approach</i> (6th ed.). McGraw-Hill Education.</li> </ol>
<p><b>Outcome</b></p>	<p>Students will be able to</p> <ol style="list-style-type: none"> <li>1. Identify key developments and contributions of eminent scientists to the field of nutrition.</li> <li>2. Explain basic concepts in human nutrition, including the digestion, absorption, and transport of macronutrients.</li> <li>3. Describe the sources, functions, and mechanisms involved in maintaining water, electrolyte, and acid-base balance.</li> </ol> <p>Application</p> <ol style="list-style-type: none"> <li>1. Apply knowledge of energy balance concepts to calculate Basal Metabolic Rate (BMR) and Total Energy Requirements.</li> <li>2. Illustrate the role of carbohydrates, proteins, and lipids in health and disease management through practical dietary examples.</li> </ol> <p>Analysis</p> <ol style="list-style-type: none"> <li>1. Analyze the interrelationships between carbohydrates, proteins, and fats in energy metabolism.</li> <li>2. Evaluate the impact of deficiencies and excesses of macronutrients on human health, including conditions like Protein Energy Malnutrition (PEM) and cardiovascular diseases.</li> </ol> <p>Evaluation</p> <ol style="list-style-type: none"> <li>1. Assess the quality of dietary proteins using various evaluation methods and identify the implications of amino acid imbalances.</li> <li>2. Critically evaluate the role of dietary fiber in preventing and managing diseases.</li> </ol> <p>Synthesis</p> <ol style="list-style-type: none"> <li>1. Design nutrition plans that address specific deficiencies and imbalances in macronutrients, water, and electrolytes.</li> </ol>

**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSF-302  
**Title of the Course** : Public Health Nutrition  
**Number of Credits** : 3T+1P  
**Effective from AY** : 2026-27

<b>Pre-requisites for the Course:</b>	<b>SY BSc Home Science with Food, Nutrition and Dietetics specialization</b>	
<b>Course Objectives:</b>	1. To know the basics of public health nutrition 2. To understand the need of prioritizing nutrition issues 3. To assess the nutritional and Health Status of an individual and the community. 4. To learn about nutritional programs and policies to overcome malnutrition 5. To understand various national and International nutritional organizations for combating malnutrition 6. To apply ICT in the formulation of community nutrition education programme	
<b>Content:</b>		<b>No of Hours</b>
	<b>Unit I: Foundations of Public Health Nutrition</b> <ul style="list-style-type: none"> <li>• Definition, scope, and importance of public health nutrition in national development</li> <li>• Roles and responsibilities of public health nutritionists</li> <li>• Key concepts: optimum health, malnutrition (underweight, overweight, obesity, micronutrient deficiencies), nutritional status, morbidity &amp; mortality, food and nutrient supplements, nutrition education, nutrition interventions</li> <li>• Nutrition through the life cycle</li> <li>• Dual burden of malnutrition in India</li> <li>• Nutrition as a global developmental priority (relation to SDGs)</li> <li>• Ecology and consequences of malnutrition</li> <li>• Link between nutrition, food security, and sustainable development</li> </ul>	<b>5</b>
	<b>Unit II: Nutritional Assessment – Anthropometric and Clinical</b> <ul style="list-style-type: none"> <li>• Nutritional assessment: definitions, objectives, tools, and standards</li> <li>• Direct methods:               <ul style="list-style-type: none"> <li>○ <b>Anthropometry:</b> Techniques (weight, height, MUAC, BMI, etc.), indices (weight-for-age, height-for-age, BMI-for-age)</li> <li>○ WHO growth standards (infants, children, adolescents) and interpretation</li> </ul> </li> <li>• Clinical examination of nutrition-related signs and symptoms</li> <li>• Grouping of clinical signs by nutrient deficiency (e.g., Vitamin A, Iron, Iodine, B-complex)</li> <li>• Ecological and indirect indicators: environment, food prices, SES, mortality &amp; morbidity rates</li> </ul>	<b>15</b>
	<b>Unit III: Nutritional Assessment – Biochemical and Dietary</b> <ul style="list-style-type: none"> <li>• Biochemical assessment parameters:               <ul style="list-style-type: none"> <li>○ Macronutrients: proteins, lipids, carbohydrates</li> <li>○ Micronutrients: Iron, Vitamin A, B-complex, Vitamin C, Vitamin D, iodine, electrolytes</li> <li>○ Reference values and interpretation</li> </ul> </li> <li>• Dietary assessment methods:               <ul style="list-style-type: none"> <li>○ 24-hour recall, food frequency, weighed food records, food composition tables</li> <li>○ Rapid assessment techniques, dietary diversity scores (household, women, children)</li> </ul> </li> <li>• Indirect indicators: vital statistics, age-specific mortality and morbidity</li> </ul>	<b>15</b>

	<p><b>Unit IV: Nutrition Programs and Interventions in India and Role of Organizations in Public Health Nutrition</b></p> <ul style="list-style-type: none"> <li>• Importance of nutrition in the first 1000 days</li> <li>• WHO Global Nutrition Targets 2025</li> <li>• Key national programs: <ul style="list-style-type: none"> <li>○ ICDS (Mission Mode, supplementary feeding schemes)</li> <li>○ Mid-Day Meal Program</li> <li>○ Fortification Programs (DFS, oil, wheat, milk)</li> <li>○ Micronutrient Control Programs:</li> </ul> </li> </ul> <p><b>Role of Organizations in Public Health Nutrition</b></p> <ul style="list-style-type: none"> <li>• National bodies: ICMR, ICAR, NIN, NNMB, CFTRI, NFI, DFRL, CSWB, SSWB, NIPCCD</li> <li>• International organizations: WHO, UNICEF, World Bank, WFP, BMGF</li> <li>• Voluntary organizations: CARE, CRS, AFPRO, GAIN, IDA, MI, Save the Children, WABA, Tata Trusts</li> <li>• Contributions of these bodies to policy, research, community programs, and nutrition targets</li> </ul>	<b>10</b>
	<p><b>PRACTICAL</b></p> <ol style="list-style-type: none"> <li>1. Anthropometric Measurements : measure and assess the nutritional status of individuals using anthropometric techniques (weight, height, MUAC, BMI).</li> <li>2. Dietary Recall and Analysis : conduct 24-hour dietary recall interviews, analyze the food intake data using food composition tables and compare nutrient intake with RDA.</li> <li>3. Micronutrient Deficiency Screening : Use clinical signs (e.g., pallor, goiter, night blindness) to screen for deficiencies in individuals or groups</li> <li>4. Food Preparation for Community Nutrition: Plan and Prepare meals suitable for programs like Mid-Day Meals or ICDS, ensuring nutritional adequacy, cost-effectiveness, and cultural appropriateness.</li> <li>5. Nutritional Education Campaign: Plan and develop a campaign (posters, social media, educational materials) to raise awareness about a specific nutrition-related issue (e.g., preventing childhood obesity).</li> <li>6. Nutritional Assessment of a Local Community: visit a local community, gather data on dietary habits and propose targeted nutrition interventions.</li> </ol>	<b>30</b>
<b>Pedagogy</b>	Regular lectures, Field visits, Group discussion, ICT enabled learning experiences	
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Bamji M.S, Prahlad Rao N, Reddy V (2004). Textbook of Human Nutrition II Edition, Oxford and PBH Publishing Co. Pvt. Ltd , New Delhi</li> <li>2. Bhatt D.P (2008), Health Education, Khel Sahitya Kendra, New Delhi • Gibney MJ, Margetts BM, Kearney JM, Arab L (2004) Public Health Nutrition Blackwell Publishing Co. UK</li> <li>3. Communication for Development (C4D) Capability Development Framework, UNICEF and 3D Change, 2009</li> <li>4. Field guide to designing communication strategy, WHO publication-2007</li> <li>5. Health education (2012): theoretical concepts, effective strategies and core competencies: a foundation document to guide capacity development of health educators/World Health Organization. Regional Office for the Eastern Mediterranean,.</li> <li>6. Ministry of Health &amp; Family Welfare, <a href="http://www.mohfw.nic.in">www.mohfw.nic.in</a></li> <li>7. National Nutrition Mission – ICDS. <a href="http://icds-wcd.nic.in">icds-wcd.nic.in</a></li> <li>8. Park A. (2007), Park’s Textbook of Preventive and Social Medicine XIX Edition M/S Banarasidas, Bharat Publishers, 1167, Prem Nagar, Jabalpur, 428 001(India)</li> <li>9. Swaminathan M (2007), Essentials of Food and Nutrition. An Advanced Textbook Vol.I, The Bangalore Printing and Publishing Co. Ltd, Bangalore</li> <li>10. UNICEF. <a href="https://www.unicef.org/">https://www.unicef.org/</a></li> <li>11. WHO Non-communicable diseases and risk factors. <a href="http://www.who.int/ncds/en/">http://www.who.int/ncds/en/</a></li> </ol>	

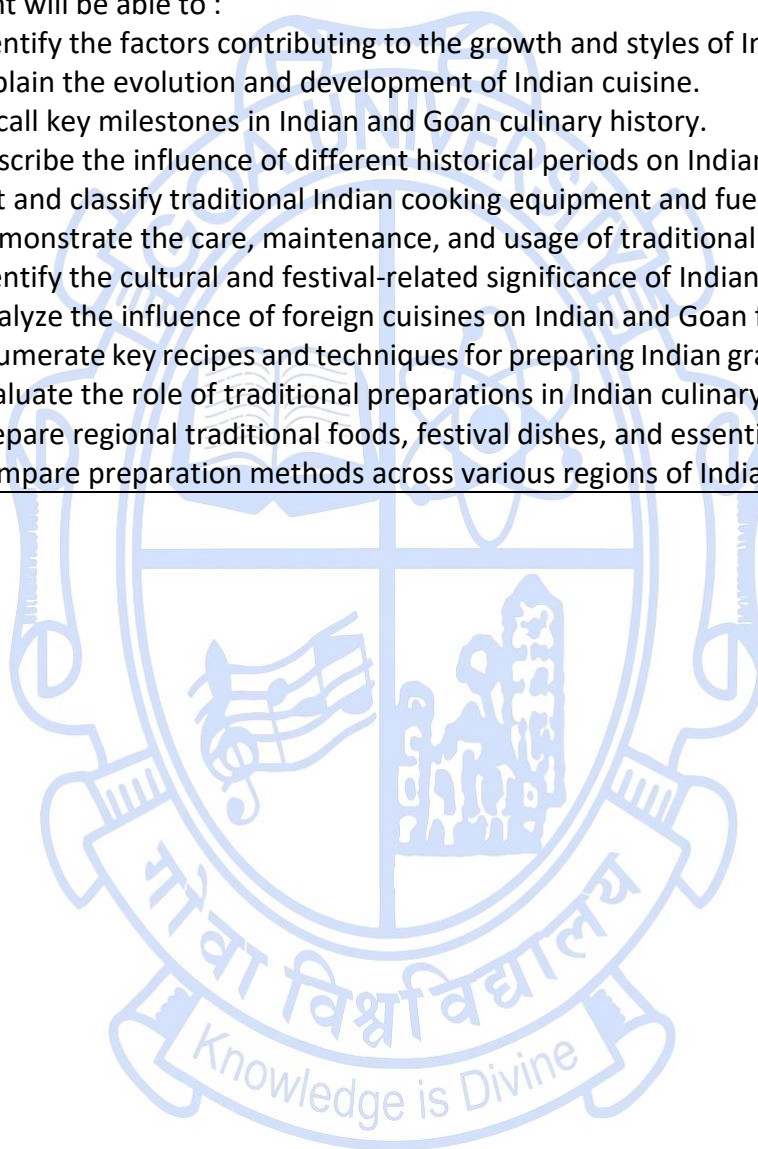
	12. WHO. <a href="http://www.who.int/">http://www.who.int/</a> • National Guidelines on Infant and Young Child Feeding. <a href="http://www.wcd.nic.in">http://www.wcd.nic.in</a>
<b>Course Outcomes</b>	<p>Students will be able to</p> <ol style="list-style-type: none"> <li>1. Define key concepts in public health nutrition, including malnutrition, nutritional status, and food security.</li> <li>2. Explain the roles and responsibilities of public health nutritionists in promoting optimum health and combating malnutrition.</li> <li>3. Identify the causes, signs, symptoms, treatment, and prevention strategies for communicable diseases.</li> <li>4. Demonstrate proficiency in applying nutritional assessment techniques, including anthropometry, biochemical analysis, clinical examination, and dietary assessments.</li> <li>5. Apply guidelines such as Optimal Infant and Young Child Feeding (IYCF) to address public health nutrition challenges.</li> <li>6. Analyze the impact of malnutrition on national development and public health indicators such as morbidity and mortality rates.</li> <li>7. Evaluate the effectiveness of national and international programs aimed at combating micronutrient malnutrition and improving global nutrition targets.</li> <li>8. Assess the success and limitations of nutrition intervention programs like the National Nutrition Mission, ICDS, PM Poshan (Mid-Day Meal program), and deworming campaigns.</li> <li>9. Evaluate the significance of global organizations such as WHO, UNICEF, and WFP in addressing malnutrition and improving nutrition security.</li> <li>10. Design community-based nutrition intervention plans to address malnutrition and improve health outcomes, considering both direct and indirect assessment methods.</li> </ol>



**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSF-303  
**Title of the Course** : Food heritage of India  
**Number of Credits** : 1T+1P  
**Effective from AY** : 2025-26

<b>Pre-requisites for the Course:</b>	SY BSc Home Science with Food ,Nutrition And Dietetics specialization	
<b>Course Objectives:</b>	<ol style="list-style-type: none"> <li>1. To introduce the students to Indian cuisine</li> <li>2. To acquire knowledge on Culture related to food</li> <li>3. To learn about the various equipments used traditionally in Indian cuisine</li> </ol>	
<b>Content:</b>		<b>No of Hours</b>
	<b>Unit 1</b> Introduction to Indian Cuisine: Introduction; Growth of Indian cuisine; Introduction to various styles of Indian cookery; Development of Indian cuisine.	<b>3</b>
	<b>Unit 2</b> History of Indian Cuisine: History, Ancient, Medieval and modern history of Indian cuisine and History of Goan Cuisines	<b>3</b>
	<b>Unit 3</b> Equipments and Fuels used in the Indian/Goan Kitchen: Classification of Indian equipments; drawings; Care and maintenance.	<b>3</b>
	<b>Unit 4</b> Indian Culture and Food: Festival food, Culture related to food, Importance of Indian herbs and spices, Influence of foreign food culture on Indian cuisine/Goan Cuisine.	<b>3</b>
	<b>Unit 5</b> Pastes, Gravies , Masalas Pickles and jams : Various pastes, masalas, basic gravies and Pickles and jams prepared in Indian cuisine/Goan Cuisine.	<b>3</b>
	<b>Practical</b> <ol style="list-style-type: none"> <li>1. Sensory Evaluation of Spices and Ingredients – Identifying, smelling, and tasting spices, grains, and traditional ingredients.</li> <li>2. Food Mapping Activity – Creating a regional food map of India with key dishes and their origins.</li> <li>3. Indigenous Cooking Methods – Using earthen pots, dum cooking, stone grinding, and open-fire cooking.</li> <li>4. Traditional Fermentation Techniques – Making idli/dosa batter, kanji (fermented carrot drink), and pickles.</li> <li>5. Handmade Grains &amp; Breads – Preparing rotis, bhakris, thepla, and appams using traditional methods.</li> <li>6. Cooking North Indian Heritage Dishes – Baati-Chokha, Sarson da Saag &amp; Makki di Roti, Dum Biryani.</li> <li>7. Cooking South Indian Heritage Dishes – Chettinad curries, Pongal, Kerala Avial, Andhra Pesarattu., Karnatake Besibele bhaat or Yennagayi ( Stuffed brinjal)</li> <li>8. Cooking Eastern &amp; North-Eastern Dishes – Litti Chokha, Thukpa, Pitha, Bamboo Shoot Curry.</li> <li>9. Cooking Western Indian Dishes – Daal Baati, Parsi Dhansak, Thepla &amp; Undhiyu, Goan Bebinca. Jhunka, Sabudana khichdi</li> <li>10. Making Traditional Indian Sweets – Mysore Pak, Ghevar, Modak, Chhena Poda, Puran Poli, Payasam.</li> <li>11. Festive Foods of India – Cooking foods specific to Diwali, Holi, Pongal, Eid, and Christmas.</li> <li>12. Ancient Preservation Techniques – Sun-drying, pickling (mango, lemon, amla), making papads and vadis.</li> </ol>	<b>30</b>

<b>Pedagogy</b>	Regular lectures, Field visits, ICT enabled learning experiences
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Arora, K. (1995) Theory of Catering. Frank Brothers.</li> <li>2. Achaya, K. T.( 1998). Indian and Neighboring Countries Food. Oxford.</li> <li>3. Fátima da Silva Gracias, &amp; Rodrigues, V. (2018). Cozinha de Goa: History and Tradition of Goan Food. Broadway Publishing House.</li> <li>4. Fuller, J. (2002) Chef Manual of Kitchen Management. Publisher.</li> <li>5. Grigson, J. (2005) The Book of Ingredients. Publisher.</li> <li>6. McWilliams, M. (2007). Food Around the World. Pearson.</li> <li>7. Menezes, M. T. (2010). The Essential Goa Cookbook. Penguin India.</li> <li>8. Philip, T. (2000). Modern Cookery for Teaching &amp; Trade (Vol. I). Orient Longman.</li> </ol>
<b>Course Outcomes</b>	<p>Student will be able to :</p> <ol style="list-style-type: none"> <li>1. Identify the factors contributing to the growth and styles of Indian cuisine.</li> <li>2. Explain the evolution and development of Indian cuisine.</li> <li>3. Recall key milestones in Indian and Goan culinary history.</li> <li>4. Describe the influence of different historical periods on Indian cuisine.</li> <li>5. List and classify traditional Indian cooking equipment and fuels.</li> <li>6. Demonstrate the care, maintenance, and usage of traditional tools.</li> <li>7. Identify the cultural and festival-related significance of Indian foods.</li> <li>8. Analyze the influence of foreign cuisines on Indian and Goan food traditions.</li> <li>9. Enumerate key recipes and techniques for preparing Indian gravies, masalas, and pickles.</li> <li>10. Evaluate the role of traditional preparations in Indian culinary authenticity.</li> <li>11. Prepare regional traditional foods, festival dishes, and essential gravies/masalas.</li> <li>12. Compare preparation methods across various regions of India.</li> </ol>

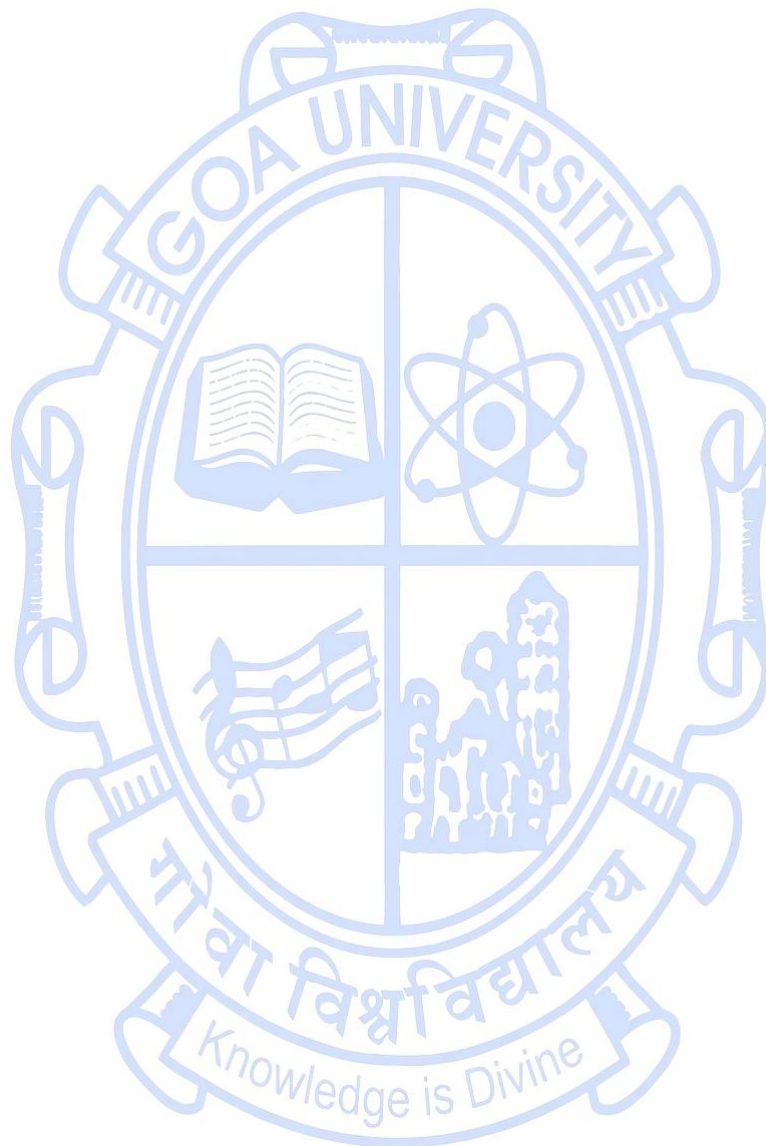


**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSF-321  
**Title of the Course** : Bakery Technology  
**Number of Credits** : 2T+2P  
**Effective from AY** : 2025-26

<b>Pre-requisites for the Course:</b>	SY BSc Home Science	
<b>Course Objectives:</b>	<ol style="list-style-type: none"> <li>1. Identify and explain baking terms, ingredients, equipment and tools.</li> <li>2. Employ safe food handling practices using contemporary guidelines</li> <li>3. Scale and measure ingredients.</li> <li>4. Prepare yeast dough, quick breads, pies, cookies, cakes, icing, pate choux, and savory baking.</li> <li>5. Produce baked products using commercial ingredients and equipment.</li> </ol>	
<b>Content:</b>		<b>No of Hours</b>
	<b>Unit 1: Introduction to Bakery and Confectionery Technology</b> <ul style="list-style-type: none"> <li>• History and evolution of the baking and confectionery industry</li> <li>• Classification of bakery and confectionery products</li> <li>• Overview of raw materials and their functions (flours, fats, sweeteners, dairy, leavening agents, etc.)</li> <li>• Food safety standards and regulations in bakery production</li> </ul>	<b>5</b>
	<b>Unit 2: Basic Baking Principles</b> <ul style="list-style-type: none"> <li>• Role of ingredients in dough and batter formation</li> <li>• Mixing methods: Straight dough, sponge, creaming, foaming, and blending</li> <li>• Gluten development and its impact on bakery products</li> <li>• Baking process: Heat transfer, moisture loss, and structural setting</li> </ul>	<b>5</b>
	<b>Unit 3: Bread and Yeast-Based Products</b> <ul style="list-style-type: none"> <li>• Types of bread: White, whole wheat, multigrain, sourdough, enriched breads</li> <li>• Bread-making process: Dough preparation, fermentation, proofing, baking, cooling</li> <li>• Factors affecting bread quality and common defects</li> <li>• Specialty breads and international bread varieties</li> </ul>	<b>5</b>
	<b>Unit 4: Cakes, Pastries, and Cookies</b> <ul style="list-style-type: none"> <li>• Cake classification: Shortened, foam, chiffon cakes</li> <li>• Cake mixing methods and their effects on texture</li> <li>• Types of pastries: Puff, choux, shortcrust, filo, laminated doughs</li> <li>• Cookie production techniques and ingredient variations</li> </ul>	<b>5</b>
	<b>Unit 5: Confectionery Technology</b> <ul style="list-style-type: none"> <li>• Classification of confectionery products: Sugar-based, chocolate-based, and dairy-based confections</li> <li>• Principles of sugar confectionery: Crystallization, caramelization, and aeration</li> <li>• Chocolate processing: Cocoa bean to chocolate, tempering, molding, and enrobing</li> <li>• Quality parameters and defects in confectionery products</li> </ul>	<b>5</b>
	<b>Unit 6: Packaging, Storage, and Quality Control</b> <ul style="list-style-type: none"> <li>• Packaging techniques for bakery and confectionery items</li> <li>• Shelf-life factors and storage conditions</li> <li>• Sensory evaluation and product testing</li> <li>• HACCP and food safety in bakery and confectionery production Innovations and Trends in Bakery &amp; Confectionery</li> </ul>	<b>5</b>

	<p><b>PRACTICAL</b></p> <ol style="list-style-type: none"> <li>1. Bread and Dough-Based Products – Preparation of basic bread, rolls, pizza dough, and specialty breads.</li> <li>2. Cake and Pastry Making – Production of sponge cakes, pound cakes, muffins, choux pastry, and puff pastry.</li> <li>3. Cookie and Biscuit Production – Baking different types of cookies and biscuits with varied ingredients.</li> <li>4. Preparation of Modified baked products ( Breads, cakes, rolls and puffs) High fiber/ Multigrain, Different flavours ,Low / alternate sugar, low fat/ No fat Eggless, Gluten free, and Millet based bakery products for special nutritional requirements.</li> <li>5. Confectionery Techniques – Making caramels, toffees, marshmallows, fudges, and hard candies.</li> <li>6. Chocolate Work – Chocolate tempering, molding, and creating truffles and pralines.</li> <li>7. Bakery Product Quality Analysis – Testing texture, moisture content, and sensory properties of baked goods and shelf life of the products</li> </ol>	<b>60</b>
<b>Pedagogy</b>	Regular lectures, demonstrations, Exercises on observation and follow up with group discussions, case studies, ICT enabled teaching and learning experiences in terms of video lessons and documentary film shows	
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Chakrabarty, R. (2015). <i>Handbook of Bakery and Confectionery</i>. Oxford &amp; IBH Publishing.</li> <li>2. Dubey, S.C. (2012). <i>Basic Baking: Science and Craft</i>. New Age International Publishers.</li> <li>3. Dubey, S.C. (2017). <i>Basic Baking</i>, 5th Edition, ChanakyaMudrakPvt. Ltd., New Delhi.</li> <li>4. Faridi, F (2004). <i>Dough Rheology and Baked Product Texture</i>, CBS Publication, New Delhi</li> <li>5. Gupta, R.K. (2016). <i>Bakery Technology and Management</i>. CBS Publishers &amp; Distributors.</li> <li>6. Khatkar, B.S. (2019). <i>Textbook of Bakery and Confectionery</i>. CBS Publishers &amp; Distributors.</li> <li>7. Manay, S &amp;Shanaksharaswami, M. (2014) <i>Foods : Facts and Principles</i>, New Age Publishers, New Delhi</li> <li>8. Manay, S.N. &amp; Shadaksharaswamy, M. (2014). <i>Foods: Facts and Principles</i>. New Age International Publishers.</li> <li>9. Pruthi, J.S. (2001). <i>Quick Freezing Preservation of Foods: Principles, Practices, and Applications</i>. Allied Publishers.</li> <li>10. Rainact, AL. (2013). <i>Basic Food Preparation – Complete Manual</i>, 3rd Edition, Orient Longman Pvt Ltd., Mumbai</li> <li>11. Ranganna, S. (2001). <i>Handbook of Analysis and Quality Control for Fruit and Vegetable Products</i>. Tata McGraw-Hill.</li> <li>12. Samuel A, Martz (2004). <i>Bakery Technology and Engineering</i>, PAN-TECHI International IncorporatedP.Ltd, Madras.</li> <li>13. Siddiqui, M.W. &amp; Ahmad, I. (2014). <i>Postharvest Biology and Technology of Horticultural Crops</i>. Springer India.</li> <li>14. Srivastava, R.P. &amp; Kumar, S. (2012). <i>Fruit and Vegetable Preservation: Principles and Practices</i>. CBS Publishers &amp; Distributors.</li> <li>15. Yadav, R. &amp; Sharma, A. (2015). <i>Food Processing and Preservation</i>. Kalyani Publishers.</li> </ol>	
<b>Course Outcomes</b>	<ol style="list-style-type: none"> <li>1. Identify ingredients, equipment, and basic baking principles.</li> <li>2. Explain processes like dough formation, mixing, and gluten development.</li> <li>3. Demonstrate preparation of breads, cakes, biscuits, and other baked goods.</li> <li>4. Compare the sensory and quality characteristics of various baked products.</li> <li>5. Assess nutritional quality, safety standards, and sensory attributes of bakery products.</li> <li>6. Design innovative baked items for specific dietary needs, such as gluten-free or low-fat products.</li> </ol>	

7. Describe bakery unit planning, layout, and equipment requirements.
8. Apply techniques for cake decoration, including icing and fillings.
9. Diagnose faults in baked goods and recommend corrective measures.
10. Develop and evaluate confectionery products like chocolates and marshmallows.
11. Develop skills for setting up a bakery unit



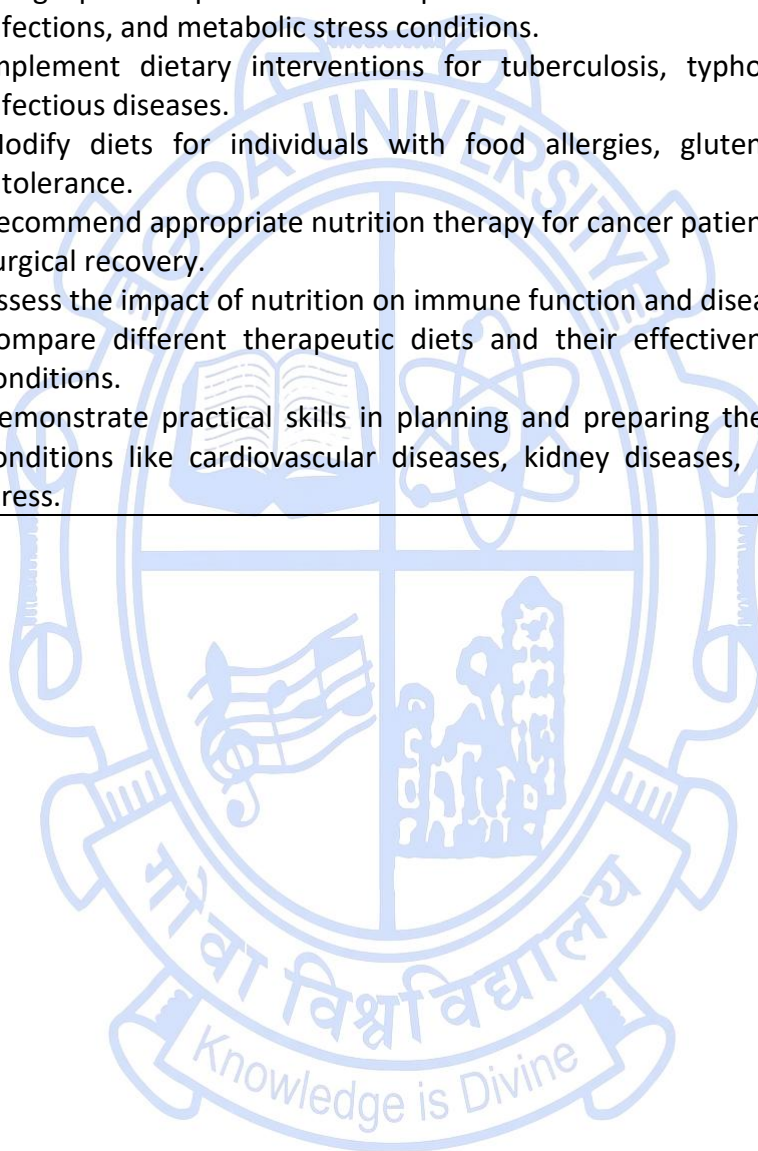
**SEMESTER VI**

**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSF-304  
**Title of the Course** : Medical Nutrition Therapy II  
**Number of Credits** : 3T+1P  
**Effective from AY** : 2025-2026

<b>Pre-requisites for the Course:</b>	SY BSc Home Science -Food Nutrition and Dietetics	
<b>Course Objectives:</b>	<ul style="list-style-type: none"> <li>• Gain knowledge on the principles of diet therapy</li> <li>• Designing or formulating different therapeutic diets for various disease conditions</li> <li>• Develop the skill to plan and prepare therapeutic diets for the prevention of disease conditions.</li> <li>• Understand the causes and symptoms of deficiency disorders.</li> </ul>	
<b>Content:</b>		<b>No of Hours</b>
	<p><b>Unit I: Medical Nutrition Therapy in Cardiovascular Disorders</b></p> <ul style="list-style-type: none"> <li>• <b>Conditions:</b> Atherosclerosis, Hyperlipidemia, Ischemic Heart Disease, Congestive Heart Failure, Post-Bypass Surgery Recovery, Hypertension</li> <li>• <b>Key Components:</b> <ul style="list-style-type: none"> <li>○ Etiology, Pathophysiology, and Clinical Manifestations</li> <li>○ Therapeutic goals and nutritional management</li> <li>○ Lifestyle modification strategies including physical activity and stress management</li> <li>○ DASH Diet and its application in hypertension</li> <li>○ Role of omega-3 fatty acids, sodium, fiber, and antioxidants</li> </ul> </li> </ul>	<b>9</b>
	<p><b>Unit II: Medical Nutrition Therapy in Renal Disorders</b></p> <ul style="list-style-type: none"> <li>• <b>Conditions:</b> Glomerulonephritis, Nephrotic Syndrome, Nephrolithiasis (Kidney Stones), Acute Renal Failure, Chronic Kidney Disease</li> <li>• <b>Special Focus:</b> <ul style="list-style-type: none"> <li>○ Dialysis – Indications, Principles, and Types (Hemodialysis and Peritoneal Dialysis)</li> <li>○ Electrolyte and fluid balance, protein and phosphorus management</li> <li>○ Nutritional requirements pre-, during, and post-dialysis</li> </ul> </li> </ul>	<b>9</b>
	<p><b>Unit III: Medical Nutrition Therapy in Infectious Diseases and Fevers</b></p> <ul style="list-style-type: none"> <li>• <b>Conditions:</b> Typhoid, Tuberculosis, HIV/AIDS</li> <li>• <b>Inclusions:</b> <ul style="list-style-type: none"> <li>○ Etiology, Pathophysiology, and Nutritional implications</li> <li>○ Immune support through diet</li> <li>○ Nutritional care during active disease and recovery</li> <li>○ ART-related nutritional concerns in HIV/AIDS</li> <li>○ Food safety and sanitation in immunocompromised individuals</li> </ul> </li> </ul>	<b>9</b>
	<p><b>Unit IV: Medical Nutrition Therapy in Food Allergy and Intolerance</b></p> <ul style="list-style-type: none"> <li>• <b>Topics:</b> <ul style="list-style-type: none"> <li>○ Food Allergies: Definition, Causes, Immunological Basis, Clinical Features, Diagnostic Tests (Elimination diets, RAST, etc.), and Dietary Management</li> <li>○ Food Intolerances: Lactose Intolerance, Gluten Sensitivity (Non-Celiac Gluten Sensitivity and Celiac Disease)</li> <li>○ Label reading, allergen avoidance, and substitute planning</li> </ul> </li> </ul>	<b>9</b>
	<p><b>Unit V: Medical Nutrition Therapy in Metabolic Stress and Cancer</b></p> <ul style="list-style-type: none"> <li>• <b>Conditions:</b> Burns, Major Surgeries, and Cancer</li> <li>• <b>Content:</b> <ul style="list-style-type: none"> <li>○ Etiology, Stress Response, and Metabolic Alterations</li> </ul> </li> </ul>	<b>9</b>

	<ul style="list-style-type: none"> <li>○ Nutritional requirements and diet planning during acute stress and recovery</li> <li>○ Types of cancer: Brief overview</li> <li>○ Role of nutrition in cancer prevention, treatment support, and palliative care</li> <li>○ Immunonutrition, enteral and parenteral nutrition when indicated</li> </ul>	
	<p><b>Practicals:</b></p> <p><b>Cardiovascular Diseases</b></p> <ol style="list-style-type: none"> <li>1. Plan and prepare a DASH diet for a patient with hypertension.</li> <li>2. Modify a regular diet into a heart-friendly diet (low cholesterol, low saturated fat, high fiber).</li> <li>3. Case study-based menu planning for post-bypass surgery recovery.</li> <li>4. Nutrient calculation exercise focusing on fat, sodium, and fiber intake in atherosclerosis.</li> </ol> <p><b>Renal Disorders</b></p> <ol style="list-style-type: none"> <li>1. Diet planning for Chronic Kidney Disease (CKD) – Pre-dialysis and dialysis.</li> <li>2. Plan and prepare Protein-restricted diet for acute nephritis.</li> <li>3. Design an oxalate-controlled diet for nephrolithiasis (kidney stones).</li> <li>4. Prepare fluid-restricted diets for renal failure patients.</li> </ol> <p><b>Infections and Fevers</b></p> <ol style="list-style-type: none"> <li>1. Diet for typhoid – Soft, easy-to-digest, high-calorie meals.</li> <li>2. High-protein, high-calorie meal plan for tuberculosis.</li> <li>3. Nutrition intervention for HIV/AIDS – Immune-supportive, calorie-dense diets.</li> <li>4. Interactive session on food safety for immunocompromised patients.</li> </ol> <p><b>Food Allergy and Intolerance</b></p> <ol style="list-style-type: none"> <li>1. Identify common allergens in food labels (gluten, nuts, dairy).</li> <li>2. Plan an elimination diet for suspected food allergies.</li> <li>3. Plan and Prepare a lactose-free and gluten-free meal</li> <li>4. Conduct a mock consultation on managing food allergies.</li> </ol> <p><b>Metabolic Stress &amp; Cancer</b></p> <ol style="list-style-type: none"> <li>1. Diet for burn patients – High protein, high energy.</li> <li>2. Post-surgical diet planning – Progressive diet from clear fluids to regular meals.</li> <li>3. Cancer-supportive diets – Nutrient-dense meals for patients undergoing chemotherapy. ( Plan and prepare)</li> <li>4. Plan enteral nutrition (using commercial feeds or blenderized formulas) for severe cases.</li> </ol>	<b>30</b>
<b>Pedagogy</b>	Regular lectures, Field visits, Group discussion, ICT-enabled learning experiences	
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Brown, J (2014). Nutrition now (7thed). Wadsworth, USA, ISBN- 13:978-1-133-93653-4, ISBN 10:1-133-93653-9</li> <li>2. C. Gopalan, B. V. Ramashastry and S. C. Balasubramanian (2004): Nutritive Value of Indian Foods, NIN, ICMR, Hyderabad.</li> <li>3. Dietary Guidelines of Indians – A Manual, National Institute of Nutrition, Hyderabad, 2011.</li> <li>4. Garg, M. Diet, Nutrition and Health, ABD Publishers, 2006.</li> <li>5. Garrow J.S. &amp; W.P.T. James (2000): Human Nutrition and Dietetics, 10th Edition, Churchill Livingstone Inc.</li> <li>6. Joshi S. A. (2002): Nutrition and Dietetics, 2nd Edition, Tata McGraw-Hill Publishing Company Limited.</li> <li>7. Krause, M.V. and Mahan, L.K. Food, Nutrition and Diet Therapy, 9th Ed., W.B. Saunders Company, Philadelphia, 2019.</li> <li>8. Maimun Nisha, Diet Planning for Diseases, Kalpaz Publishers, 2016.</li> <li>9. Nelms M, Sucher K (2015). Nutrition Therapy and Pathophysiology. (3rd edition) Cengage Learning, USA. ISBN-13: 978-1305111967, ISBN-10: 1305111966</li> <li>10. Srilakshmi, B. Dietetics ,New Age International P. Ltd., New Delhi, 2018.</li> <li>11. T. Longvah, R. Ananthan, K. Bhaskarchary and K. Venkalah (2017). Indian Food</li> </ol>	

	Composition Tables, National Institute of Nutrition (NIN), Hyderabad.
<b>Course Outcomes</b>	<p><b>Students will be able to</b></p> <ol style="list-style-type: none"> <li>1. Identify the etiology, pathophysiology, and clinical symptoms of major cardiovascular, renal, infectious, allergic, and metabolic stress-related diseases.</li> <li>2. Explain the role of medical nutrition therapy (MNT) in managing cardiovascular diseases, kidney disorders, infections, food allergies, and metabolic stress conditions.</li> <li>3. Apply dietary guidelines such as the DASH diet and protein-restricted diets to improve patient health outcomes.</li> <li>4. Analyze the impact of various diseases on metabolism and nutritional status.</li> <li>5. Evaluate the effectiveness of different dietary modifications in disease prevention and management.</li> <li>6. Design patient-specific nutrition plans for cardiovascular diseases, kidney diseases, infections, and metabolic stress conditions.</li> <li>7. Implement dietary interventions for tuberculosis, typhoid, HIV/AIDS, and other infectious diseases.</li> <li>8. Modify diets for individuals with food allergies, gluten sensitivity, and lactose intolerance.</li> <li>9. Recommend appropriate nutrition therapy for cancer patients, burn victims, and post-surgical recovery.</li> <li>10. Assess the impact of nutrition on immune function and disease progression.</li> <li>11. Compare different therapeutic diets and their effectiveness in managing chronic conditions.</li> <li>12. Demonstrate practical skills in planning and preparing therapeutic diets for clinical conditions like cardiovascular diseases, kidney diseases, infections, and metabolic stress.</li> </ol>



**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSF-305  
**Title of the Course** : Advanced Nutrition - II  
**Number of Credits** : 3T+1P  
**Effective from AY** : 2025-26

<b>Pre-requisites for the Course:</b>	SY BSc Home Science -Food Nutrition and Dietetics	
<b>Course Objectives:</b>	<ol style="list-style-type: none"> <li>To develop an in-depth understanding of the physiological roles, dietary sources, and requirements of vitamins and minerals.</li> <li>To analyze the clinical implications of vitamin and mineral deficiencies and toxicities.</li> <li>To apply knowledge of micronutrients in planning balanced and therapeutic diets.</li> <li>To build practical skills in identifying sources, and preparing nutrient-rich meals based on micronutrient needs.</li> </ol>	
<b>Content:</b>		<b>No of Hours</b>
	<b>Unit 1: Introduction to Vitamins</b> <ul style="list-style-type: none"> <li>Definition, history, and importance of vitamins in human nutrition</li> <li>Classification: Water-soluble and Fat-soluble vitamins</li> <li>General functions, absorption, storage, and interactions</li> </ul>	<b>5</b>
	<b>Unit 2: Fat-Soluble Vitamins</b> <ul style="list-style-type: none"> <li>Forms, dietary sources, recommended dietary allowances (RDA), functions, deficiency symptoms, and toxicity of:               <ul style="list-style-type: none"> <li><b>Vitamin A</b></li> <li><b>Vitamin D</b></li> <li><b>Vitamin E</b></li> <li><b>Vitamin K</b></li> </ul> </li> </ul>	<b>12</b>
	<b>Unit 3: Water-Soluble Vitamins</b> <ul style="list-style-type: none"> <li>Sources, RDA, physiological functions, deficiency symptoms, and interactions of:               <ul style="list-style-type: none"> <li><b>Vitamin C (Ascorbic Acid)</b></li> <li><b>Vitamin B1 (Thiamin)</b></li> <li><b>Vitamin B2 (Riboflavin)</b></li> <li><b>Vitamin B3 (Niacin)</b> – Tryptophan conversion and Niacin Equivalent</li> <li><b>Vitamin B6 (Pyridoxine)</b></li> <li><b>Vitamin B12 (Cyanocobalamin)</b></li> <li><b>Folic Acid (Vitamin B9)</b></li> </ul> </li> </ul>	<b>12</b>
	<b>Unit 4: Macro Minerals</b> <ul style="list-style-type: none"> <li>Sources, RDA, biological functions, deficiency manifestations, and toxicity of:               <ul style="list-style-type: none"> <li><b>Calcium</b></li> <li><b>Phosphorus</b></li> <li><b>Sodium</b></li> <li><b>Potassium</b></li> </ul> </li> </ul>	<b>6</b>
	<b>Unit 5: Micro Minerals and Trace Elements</b> <ul style="list-style-type: none"> <li>Sources, RDA, physiological roles, deficiency symptoms, and toxicity of:               <ul style="list-style-type: none"> <li><b>Iron</b></li> <li><b>Iodine</b></li> <li><b>Zinc</b></li> <li><b>Selenium</b></li> <li><b>Copper</b></li> <li><b>Chromium</b></li> </ul> </li> </ul>	<b>10</b>

	<p><b>Practical</b></p> <ol style="list-style-type: none"> <li><b>1. Identification and Food Sources:</b> <ul style="list-style-type: none"> <li>○ Identify common dietary sources of all major vitamins and minerals.</li> </ul> </li> <li><b>2. Recipe Planning and Preparation:</b> <ul style="list-style-type: none"> <li>○ Plan and prepare nutrient-dense recipes rich in vitamins and minerals using low, medium, and high-cost ingredients.</li> </ul> </li> <li><b>3. Therapeutic Meal Planning:</b> <ul style="list-style-type: none"> <li>○ Plan balanced diets for different age groups to address vitamin and mineral deficiencies (e.g., rickets, anemia, goiter).</li> </ul> </li> <li><b>4. Meal Preparation for Deficiency Disorders:</b> <ul style="list-style-type: none"> <li>○ Prepare therapeutic meals for: <ul style="list-style-type: none"> <li>▪ One vitamin deficiency (e.g., Vitamin A or B12 deficiency)</li> <li>▪ One mineral deficiency (e.g., Iron or Iodine deficiency)</li> </ul> </li> </ul> </li> </ol>	<b>30</b>
<b>Pedagogy</b>	Regular lectures, Field visits, Group discussion, debates, ICT enabled learning experiences	
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Agarwal A and Udipi SA. (2013) Text Book of Human Nutrition, Jaypee Publihers, New Delhi</li> <li>2. Bamji M.S., Rao N.P., Reddy V., (2003) Textbook of Human Nutrition, Oxford and IBH Publishing co. Ltd., New Delhi.</li> <li>3. Chaney M.S., M.L., (1979) Nutrition, 9th edition, Boston, Houghton Mifflin Co.</li> <li>4. Guthrie H. (1986) Introductory Nutrition, Times Mirror College Publication, Toronto, Canada.</li> <li>5. Mahan, L. K., Raymond, J. L., &amp; Escott-Stump, S. (2016). Krause's Food &amp; the Nutrition Care Process (14th ed.). Elsevier.</li> <li>6. Passamore R. and M.A. Eastwood (1986): Human Nutrition and Dietetics, EWBS, Churchill.</li> <li>7. Srilakshmi B ( 2018) Nutrition Science , New Age International Publishers</li> </ol>	
<b>Course Outcomes</b>	<p><b>The students will be able to</b></p> <ol style="list-style-type: none"> <li>1. Recall the classification, sources, and functions of fat- and water-soluble vitamins.</li> <li>2. Define the recommended dietary allowances (RDA) and understand the concept of toxicity and deficiency of micronutrients.</li> <li>3. Describe the role of macro and micro minerals in maintaining physiological balance and preventing nutritional disorders.</li> <li>4. Identify food sources rich in specific vitamins and minerals for different socioeconomic levels.</li> <li>5. Apply the knowledge of micronutrient functions to diagnose symptoms of deficiency disorders in different age groups.</li> <li>6. Analyze the interrelationship between vitamins and minerals and their impact on metabolic processes.</li> <li>7. Compare and contrast the symptoms and dietary management of different micronutrient deficiencies.</li> <li>8. Evaluate the effectiveness of nutrient-dense recipes in addressing vitamin and mineral deficiencies.</li> <li>9. Design balanced and therapeutic diets to meet specific micronutrient needs across various life stages.</li> <li>10. Formulate and present practical solutions for preventing and managing micronutrient deficiencies in public health settings.</li> </ol>	

**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSF-306  
**Title of the Course** : Food Technology  
**Number of Credits** : 3T+1P  
**Effective from AY** : 2025-26

<b>Pre-requisites for the Course:</b>	SY BSc Home Science -Food Nutrition and Dietetics	
<b>Course Objectives:</b>	<ul style="list-style-type: none"> <li>To understand the principles of food preservation</li> <li>Gain knowledge on different methods of preservation</li> </ul>	
<b>Content:</b>		<b>No of Hours</b>
	<b>Unit I: Introduction to Food Preservation and Traditional Methods</b> <ul style="list-style-type: none"> <li>History and development of food processing and preservation.</li> <li>Principles of food preservation: meaning, modes of action, and changes in food during preservation.</li> <li>Traditional methods of preservation:               <ul style="list-style-type: none"> <li>Smoking</li> <li>Sun drying</li> <li>Pickling and salting</li> <li>Fermentation</li> </ul> </li> </ul>	<b>10</b>
	<b>Unit II: High-Temperature Preservation, Drying, and Dehydration</b> <ul style="list-style-type: none"> <li>Heat preservation techniques:               <ul style="list-style-type: none"> <li>Moist and dry heat methods</li> <li>Blanching, pasteurization, sterilization, canning, and retorting</li> </ul> </li> <li>Dehydration and concentration:               <ul style="list-style-type: none"> <li>Factors affecting heat and mass transfer</li> <li>Physical and chemical changes during dehydration</li> <li>Drying methods: air convection, drum, vacuum, and freeze drying</li> </ul> </li> <li>Evaporation methods and types of evaporators used in food concentration</li> </ul>	<b>12</b>
	<b>Unit III: Low-Temperature Preservation and Use of Food Additives</b> <ul style="list-style-type: none"> <li>Cold preservation techniques:               <ul style="list-style-type: none"> <li>Refrigeration and freezing (types: air, contact, immersion, cryo, etc.)</li> <li>Changes in food during cold storage</li> </ul> </li> <li>Use of food additives:               <ul style="list-style-type: none"> <li>Classification: intentional vs. unintentional</li> <li>Functions of additives</li> <li>Use of natural compounds (antioxidants, antimicrobials) in preservation</li> </ul> </li> </ul>	<b>12</b>
	<b>Unit IV: Radiation, Microwave Heating, and Recent Advances</b> <ul style="list-style-type: none"> <li>Ionizing radiation and microwave heating:               <ul style="list-style-type: none"> <li>Types, sources, and units</li> <li>Effects and applications in food preservation</li> </ul> </li> <li>Emerging technologies in food preservation:               <ul style="list-style-type: none"> <li>Pulse Electric Field (PEF)</li> <li>Hurdle technology</li> <li>Infrared heating</li> <li>High-Pressure Processing (HPP)</li> <li>Ultrasound and Ohmic heating</li> <li>Nanotechnology in food preservation and packaging</li> </ul> </li> </ul>	<b>11</b>

	<p><b>Practical</b></p> <ul style="list-style-type: none"> <li>• Home-scale preservation of fruits and vegetables using: <ul style="list-style-type: none"> <li>○ High temperature</li> <li>○ Low temperature</li> <li>○ Drying and dehydration</li> <li>○ Chemical preservatives</li> <li>○ Fermentation</li> </ul> </li> <li>• Shelf-life studies of preserved products</li> <li>• Identification and preparation of traditional preserved foods from Goa and other regions of India</li> <li>• Visit to a food processing unit and report submission</li> </ul>	<b>30</b>
<b>Pedagogy</b>	Regular lectures, Powerpoint Presentations, Videos, Demonstrations, Interactive Activities Field visits	
References/ Readings:	<ol style="list-style-type: none"> <li>1. Frazier W. C. and Westhoff D. C. (1988). Food Microbiology, 4th Edition.</li> <li>2. Manay S. and Shadaksharaswamy M (2002). Foods – Facts and Principles. Wiley Eastern Ltd.</li> <li>3. Maria Parloa (2009), canned fruit, preserves and jellies: Household methods of preparation, US Department of Agriculture, Washington.</li> <li>4. Potter, N. N, Hotchkiss, J. H (2000). Food Science. CBS Publishers, New Delhi.</li> <li>5. Shafiur, Rahman, M. (2007), Handbook of Food Preservation, 2 nd edition, CRC press, New Delhi</li> <li>6. Sivasankar B ( 2002) Food processing <u>and</u> preservation Prentice Hall India Learning Private Limited</li> <li>7. Srilakshmi (2007). Food Science, 4th Edition. New Age International Ltd.</li> <li>8. Srivastava R.P. (2012), Fruit and vegetable preservation – Principles and Practices, International Book Distributing Co., (IBDC), New Delhi.</li> <li>9. Subalakshmi, G and Udipi (2001), S.A. Food processing and preservation. New Age International Publishers, New Delhi,.</li> </ol>	
<b>Course Outcomes</b>	<p><b>The students will be able to</b></p> <ol style="list-style-type: none"> <li>1. Recall the history, principles, and basic concepts of food preservation.</li> <li>2. Describe traditional and modern methods used for preserving foods.</li> <li>3. Identify appropriate preservation techniques for different food types and contexts.</li> <li>4. Apply principles of heat and cold preservation in planning food storage and shelf-life strategies.</li> <li>5. Analyze the physical and chemical changes in food during preservation processes.</li> <li>6. Compare the effectiveness of various drying, dehydration, and freezing methods.</li> <li>7. Evaluate the role of food additives and natural preservatives in extending shelf life.</li> <li>8. Explain recent technological advances in food preservation and their practical applications.</li> <li>9. Design and carry out home-scale food preservation procedures for fruits and vegetables.</li> <li>10. Assess the quality and shelf life of preserved foods through observation and practical testing.</li> </ol>	

**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSF-322  
**Title of the Course** : Food Packaging  
**Number of Credits** : 3T+1P  
**Effective from AY** : 2025-26

<b>Pre-requisites for the Course:</b>	SY BSc Home Science	
<b>Course Objectives:</b>	1. Gain knowledge about packaging of foods, packaging materials and systems. 2. Understand packaging of different food products 3. Attain insight into the aspects of labeling, testing and evaluation of packaged foods.	
<b>Content:</b>		<b>No of Hours</b>
	<b>Unit I: Concept of Packaging and Package Design</b> <ul style="list-style-type: none"> <li>• Introduction and history of food packaging</li> <li>• Principles and functions of packaging</li> <li>• Classification and applications</li> <li>• Packaging operations and terminology</li> <li>• Design of packages and packaging requirements</li> </ul>	<b>9</b>
	<b>Unit II: Packaging Materials</b> <ul style="list-style-type: none"> <li>• Basic packaging materials:               <ul style="list-style-type: none"> <li>○ Paper, wood, plastics, glass, metals</li> <li>○ Packaging films: polyethylene, cellophane, aluminum foil, laminates</li> </ul> </li> <li>• Advanced materials:               <ul style="list-style-type: none"> <li>○ BOPP, shrink film, cling film, edible films, and wrap films</li> </ul> </li> <li>• Testing of packaging materials (physical and chemical properties)</li> <li>• Edible and biodegradable packaging materials</li> </ul>	<b>9</b>
	<b>Unit III: Packaging Methods and Systems</b> <ul style="list-style-type: none"> <li>• Traditional packaging methods</li> <li>• Retortable containers, lined cartons, bag-in-box</li> <li>• Advanced systems:               <ul style="list-style-type: none"> <li>○ Aseptic packaging</li> <li>○ Modified Atmosphere Packaging (MAP)</li> <li>○ Controlled Atmosphere Packaging (CAP)</li> <li>○ Vacuum and gas packaging</li> <li>○ Bio-based and eco-friendly packaging</li> <li>○ Nano-packaging and ovenable packages</li> </ul> </li> <li>• Packaging equipment: filling, cartoning, vacuum sealing, conveyors, sealing, coding and marking</li> </ul>	<b>9</b>
	<b>Unit IV: Packaging of Food Products</b> <ul style="list-style-type: none"> <li>• Packaging requirements for:               <ul style="list-style-type: none"> <li>○ Bakery and confectionery</li> <li>○ Dairy products</li> <li>○ Fats and oils</li> <li>○ Fresh and minimally processed foods</li> <li>○ Beverages</li> <li>○ Processed foods</li> <li>○ Meat and seafood products</li> </ul> </li> </ul>	<b>9</b>
<b>Unit V: Storage, Handling, and Distribution of Packages</b> <ul style="list-style-type: none"> <li>• Storage and distribution practices for packaged foods</li> <li>• Testing of packaged foods: shelf-life, physical and chemical parameters</li> <li>• Food labeling:               <ul style="list-style-type: none"> <li>○ Definition, purpose, types, and materials</li> </ul> </li> </ul>	<b>9</b>	

	<ul style="list-style-type: none"> <li>○ Label adhesives and application techniques</li> <li>○ Barcodes and universal product codes (UPC)</li> <li>○ Food and nutritional labeling</li> <li>● Packaging and labeling regulations: <ul style="list-style-type: none"> <li>○ FSSAI guidelines</li> <li>○ International standards related to food safety, quality, and trade</li> </ul> </li> </ul>	
	<p><b>Practical:</b></p> <ol style="list-style-type: none"> <li>1. <b>Identification of Food Packaging Materials</b> <ul style="list-style-type: none"> <li>○ Classify and identify plastics, metals, glass, paper, Different types plastics ,bioplastics, Natural etc</li> </ul> </li> <li>2. <b>Testing Properties of Packaging Materials</b> <ul style="list-style-type: none"> <li>○ Evaluate barrier properties, thickness and flexibility</li> </ul> </li> <li>3. <b>Food Packaging Design and Labelling</b> <ul style="list-style-type: none"> <li>○ Design a mock food package with label including nutrition facts, barcode, and compliance symbols</li> </ul> </li> <li>4. <b>Shelf-Life Study</b> <ul style="list-style-type: none"> <li>○ Package food in different materials and assess quality changes of different packed foods (color, texture, moisture) over time</li> </ul> </li> <li>5. Visit to a food packaging industry and writing report</li> </ol>	<b>30</b>
<b>Pedagogy</b>	Powerpoint Presentations, Videos, Demonstrations, Interactive Activities, Field visits	
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Daise, Frank, A. (2015), Modern Processing, Packaging and Distribution System for Food, Blackie, Glasgow and London.</li> <li>2. Food Packaging Technology Handbook, (2013), NIIR Board of Consultants and Engineers, National Institute of Research, New Delhi.</li> <li>3. Modern Packaging industries, (2014), NIIR Board of Consultants and Engineers, National Institute of Industrial Research, New Delhi.</li> <li>4. Potter, N.M., (2015) Food Science, The AVI Publishing Company Inc., West Post, Connecticut, USA,</li> </ol>	
<b>Course Outcomes</b>	<p>The students will be able to</p> <ol style="list-style-type: none"> <li>1. Recall the evolution, functions, and principles of food packaging.</li> <li>2. Describe various packaging materials and their applications in food preservation.</li> <li>3. Identify suitable packaging materials and systems for different food products.</li> <li>4. Explain modern food packaging methods, including vacuum, aseptic, and MAP/CAP systems.</li> <li>5. Analyze the advantages and limitations of different packaging techniques and materials.</li> <li>6. Evaluate food labeling requirements and regulatory standards (FSSAI and international).</li> <li>7. Apply testing procedures to assess the physical and chemical properties of packaging materials.</li> <li>8. Design and label food packages using industry-standard components like nutrition panels and barcodes.</li> <li>9. Assess shelf life and product quality based on packaging material performance.</li> <li>10. Demonstrate awareness of sustainable, biodegradable, and nano-based innovations in food packaging.</li> </ol>	

**Name of the Programme** : BSc Home Science  
**Course Code** : HSF-323  
**Title of the Course** : Fermented Food Technology  
**Number of Credits** : 2T + 2P  
**Effective from AY** : 2025-26

<b>Pre-requisites for the Course:</b>	SY BSc Home Science	
<b>Course Objectives:</b>	<ol style="list-style-type: none"> <li>1. Understand the historical, biological, and chemical principles of food fermentation.</li> <li>2. Identify key microorganisms and biochemical pathways involved in fermentation processes.</li> <li>3. Learn microbial techniques for isolation, screening, and preservation used in fermentation.</li> <li>4. Examine the processing and safety of traditional and industrial fermented foods.</li> <li>5. Develop hands-on skills in preparing fermented food products and evaluating their health benefits.</li> </ol>	
<b>Content</b>	•	<b>No of hours</b>
	<b>Unit I: Principles and History of Fermentation</b> <ul style="list-style-type: none"> <li>• Definition and terminology of fermentation</li> <li>• Historical development and significance of food fermentation</li> <li>• Principles of fermentation in food and industry</li> <li>• Classification of fermented foods and their raw materials</li> <li>• Biotransformation processes in fermented foods</li> </ul>	<b>5</b>
	<b>Unit II: Fundamentals of Fermentation</b> <ul style="list-style-type: none"> <li>• Types of fermentation: acidic, alkaline, alcoholic</li> <li>• Microorganisms involved in fermentation:               <ul style="list-style-type: none"> <li>○ Yeasts (Brewer's yeast, Baker's yeast, starter cultures)</li> <li>○ Lactic acid bacteria (LAB) and other bacteria</li> <li>○ Moulds used in fermentation</li> </ul> </li> <li>• Biochemistry of fermentation pathways</li> <li>• Genetic manipulation and strain-specific traits of fermenting microbes</li> </ul>	<b>10</b>
	<b>Unit III: Microbial Isolation, Screening, and Culture Preservation</b> <ul style="list-style-type: none"> <li>• Sources and isolation techniques for fermentative microorganisms</li> <li>• Screening of efficient strains for food fermentation</li> <li>• Culture preservation techniques</li> <li>• Fermenters and sterilization:               <ul style="list-style-type: none"> <li>○ Types and basic functioning of fermenters</li> <li>○ Recovery and purification of fermented products</li> <li>○ Sterilization methods for fermenters, feedstock, and waste</li> </ul> </li> </ul>	<b>5</b>
	<b>Unit IV: Fermentation Processes for Various Foods</b> <ul style="list-style-type: none"> <li>• Traditional fermented food products:               <ul style="list-style-type: none"> <li>○ Cereal-based: Idli, Dosa, Dhokla, Bread</li> <li>○ Soy-based: Soy sauce, Tempeh, Tofu</li> <li>○ Vegetable-based: Sauerkraut, Kimchi</li> <li>○ Dairy-based: Curd, Cheese</li> <li>○ Fermented beverages: Wine, Beer, Kombucha</li> </ul> </li> <li>• Industrial fermentations: production of acids, enzymes, alcohol, flavors, and pigments</li> </ul>	<b>7</b>
	<b>Unit V: Benefits and Safety in Food Fermentation</b> <ul style="list-style-type: none"> <li>• Nutritional and health benefits of fermented foods</li> <li>• Safety in fermented food processing: microbial risks, spoilage, and quality control</li> <li>• Role of probiotics and prebiotics in health and nutrition</li> </ul>	<b>3</b>

	<b>PRACTICAL Preparations of</b> <ol style="list-style-type: none"> <li>1. Fermented Cereal and pulse products</li> <li>2. Fermented milk products</li> <li>3. Fermented fruit products</li> <li>4. Fermented vegetable products</li> <li>5. Fermented meat/fish/egg products</li> <li>6. Visits to food processing industries for fermented foods</li> </ol>	<b>60</b>
<b>Pedagogy</b>	Regular lectures, Powerpoint Presentations, Videos, Demonstrations, Interactive Activities, Field visits	
<b>References</b>	<ol style="list-style-type: none"> <li>1. Chavan, U. D. (2018). Fermented Foods and Beverages. CRC Press.</li> <li>2. Kailasapathy, K., &amp; Philip, J. (2012). Fermented Milk and Dairy Products. CRC Press.</li> <li>3. Priest, F.G. and Stewart, G.G. (2006). Handbook of Brewing. 2nd edition. New Delhi: CRC Publication.</li> <li>4. Ravinder, A. Srinivas Maloo and Dr.Emmanuel, S.J. (2013). Hand Book of Fermented foods and Beverages, 1st edition. Mumbai: Himalaya Books Publishing House.</li> <li>5. Ray, B., &amp; Joshi, V. K. (Eds.). (2014). Fermented Foods: Part I: Biochemistry and Biotechnology. CRC Press.</li> <li>6. Richard, P. 1981. Commercial Wine Making - Processing and Controls. New Delhi: AVI Publication.</li> <li>7. Tamang, J. P. (Ed.). (2010). Fermented Foods and Beverages of the World. CRC Press.</li> <li>8. Varnam, A.H.and Sutherland, J.P. (1994). Beverages: Technology, Chemistry and Microbiology. Scotland: Chapman &amp; Hall.</li> </ol>	
<b>Course Outcomes</b>	<p>The students will be able to ;</p> <ol style="list-style-type: none"> <li>1. Define fermentation and explain its historical development and significance in food processing.</li> <li>2. Classify fermented foods and identify their raw materials and biotransformation pathways.</li> <li>3. Describe the types of fermentation and the role of microorganisms involved.</li> <li>4. Analyze biochemical pathways and strain-specific traits in microbial fermentation.</li> <li>5. Demonstrate skills in isolating, screening, and preserving microbial cultures for fermentation.</li> <li>6. Explain the working principles of fermenters and sterilization techniques in food processing.</li> <li>7. Apply fermentation techniques to prepare traditional and industrial fermented foods.</li> <li>8. Evaluate the safety and quality parameters in fermented food production.</li> <li>9. Assess the functional role of probiotics and prebiotics in human health.</li> <li>10. Develop hands-on expertise in preparing various fermented food products and document their shelf-life and safety.</li> </ol>	

Name of the Programme: B.Sc. Home Science

Course Code: HSC 400

Title of the Course: Research Methodology

Number of Credits: 4T+0 P

Effective from AY: 2026-27

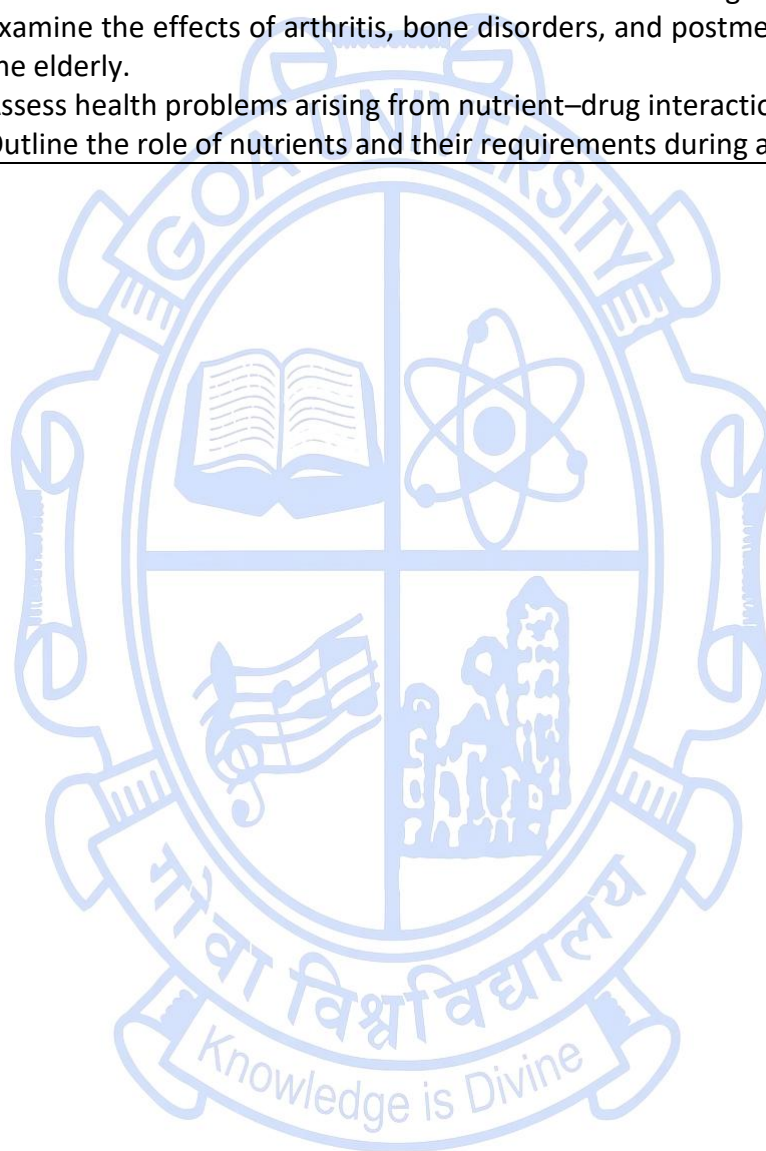
<b>Pre-requisites for the Course:</b>	T Y BSc Home Science with Food, Nutrition and Dietetics specialization	
<b>Course Objectives:</b>	<ol style="list-style-type: none"><li>1. To understand the fundamental concepts, processes, and types of research across disciplines.</li><li>2. To develop knowledge of research design, sampling techniques, and data collection tools and methods.</li><li>3. To acquire skills in data analysis, interpretation, and presentation using appropriate statistical tools.</li><li>4. To develop competence in ethical research practices, proposal writing, and dissemination of research findings.</li></ol>	
<b>Content:</b>		<b>No of Hours</b>
	<b>UNIT-1 Introduction to Research :</b> <ul style="list-style-type: none"><li>- What is research? Examining definitions of research</li><li>- Purpose/Need for Research across disciplines</li><li>- Characteristics of good research</li><li>- Outline of Steps in the Process of Research: Research problem/question/hypothesis generation, Literature review, Development of Objectives, Research Design, Sample Design, Tool Design, Data Collection, Data Analysis, Data Interpretation, Report Writing, Dissemination of Findings.</li><li>- Basic structure of a research report/journal article (abstract, introduction, rationale, objectives, method, results, discussion, summary &amp; conclusions, bibliography, appendices)</li></ul>	<b>10</b>
	<b>UNIT-2 Research &amp; Sampling Designs:</b> <ul style="list-style-type: none"><li>- Types of Research - Major classifications</li><li>- Qualitative &amp; Quantitative Research designs</li><li>- Cross-Sectional &amp; Longitudinal Research</li><li>- Conceptual &amp; Operational Definitions &amp; their importance in research</li><li>- Sampling Designs – Concept of Population, Sampling Frame, Sample</li><li>- Importance of Representative sampling</li><li>- Types of Sampling:<ul style="list-style-type: none"><li>A) Probability Sampling Methods (simple random sampling, systematic random sampling, cluster sampling, stratified random sampling) and</li><li>B) Non-Probability Sampling Methods (Convenience sampling, Judgmental/Purposive Sampling, Snowball Sampling)</li></ul></li></ul>	<b>15</b>
	<b>UNIT-3 Variables, Tools &amp; Data Collection:</b> <ul style="list-style-type: none"><li>- Variables: what are variables in research, types of variables (Independent &amp; Dependent; Discrete &amp; Continuous), Levels of measurement of variables (Nominal, Ordinal, Interval, Ratio Levels)</li><li>- Types and sources of data – Primary and secondary sources</li><li>- Types of questions – open ended, closed ended, multiple choice, Likert scales, pre-designed measures, etc.</li><li>- Tools: observation checklists, questionnaires, interview schedules</li><li>- Techniques of data collection: Consent Forms, Questionnaire, survey (telephonic, online audio/video, online forms, interview technique, observation (participant/non-participant), Case study, etc.</li></ul>	<b>15</b>
	<b>UNIT-4 Data Analysis &amp; Statistical Tools:</b>	<b>15</b>

	<ul style="list-style-type: none"> <li>- Data coding (how to code, handling missing data)</li> <li>- Data entry (manual &amp; statistical software)</li> <li>- Data Analysis: Simple analysis (mean, median, mode, standard deviation, theoretical range, actual range, frequency &amp; percentage, reporting in tabular/graphical formats – APA style)</li> <li>Advanced analysis (Tests of Comparison – t-test, chi-square, tests of correlation)</li> <li>- Reporting of results – types of graphical representations</li> </ul>	
	<p><b>UNIT-5 Ethics in Research</b></p> <ul style="list-style-type: none"> <li>- History of Ethics in Research with Human Subjects</li> <li>- Ethical codes (International &amp; National)</li> <li>- Plagiarism in research – Forms of Plagiarism, Citation/Referencing Rules, Software to aid citation, Penalties for plagiarism.</li> <li>Preparation and presentation of a research proposal for approval.</li> </ul>	<b>5</b>
<b>Pedagogy</b>	<p>Lectures, discussions, and case-based learning</p> <p>Hands-on training in research design, sampling, and tool development</p> <p>Workshops on data collection and statistical analysis research writing, referencing, and proposal preparation ICT-enabled learning activities</p>	
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Kumar, R. (2005) Research Methodology : A Step by Step Guide for Beginners. Sage Publications, New Delhi.</li> <li>2. Kerlinger F. N. and Lee, H.B. (2000) Foundations of Behavioural Research 4<sup>th</sup> Ed. Harcourt College Publishers</li> <li>3. Kothari, C. R. (2008) Research Methodology: Methods and Techniques 2<sup>nd</sup> Ed. New Age International Pvt Ltd, New Delhi.</li> <li>4. Black, J.A. &amp; Champion, D. J. ( 1976) Methods and Issues in Social Research. New York: John Wiley and Sons</li> </ol>	
<b>Outcome</b>	<p><b>Student will be able to</b></p> <ol style="list-style-type: none"> <li>1. Define and explain basic research concepts, types, and the steps involved in the research process.</li> <li>2. Describe different research designs, sampling techniques, and data collection methods.</li> <li>3. Apply appropriate sampling methods, tools, and techniques for data collection in research studies.</li> <li>4. Analyze and interpret research data using basic statistical tools and graphical representation.</li> <li>5. Evaluate research studies with respect to validity, reliability, and ethical considerations.</li> <li>6. Develop a structured research proposal including problem formulation, objectives, and methodology.</li> </ol>	

**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSF-401  
**Title of the Course** : Geriatric Nutrition  
**Number of Credits** : 3 T+1P  
**Effective from AY** : 2026-27

<b>Pre-requisites for the Course:</b>	T Y BSc Home Science with Food, Nutrition and Dietetics specialization	
<b>Course Objectives:</b>	<ol style="list-style-type: none"> <li>1. Understand the process of aging and the changes occurring there in.</li> <li>2. Identify the nutritional implications of these changes in terms of nutrient and dietary requirements.</li> <li>3. Determine different techniques of nutritional assessment of the elderly.</li> </ol>	
<b>Content:</b>		<b>No of Hours</b>
	UNIT I Introduction to Geriatrics Social, Economic and psychological aspects of ageing Physiological aspects of ageing – Ageing and Gastrointestinal Tract, Ageing and organ systems Age related alterations in – Immunity , Fluid balance , Acid base balance , Sleep alterations Thermal regulation	<b>10</b>
	UNIT II Ageing, Health and Diseases Body Composition management . Gastrointestinal Health Bone Health in the aging adult. Endocrine Disorders . Deficiency Disorders – Kidney Disorders – . Neurological Disorders . Respiratory Disorders . Post Menopausal Health	<b>10</b>
	UNIT III Food and Nutritional Requirement Food selection patterns in ageing Nutritional requirements of - Macronutrients- Carbohydrate, Proteins, Fats Vitamins and Minerals Nutrition and drug interactions	<b>10</b>
	UNIT IV Assessment of Nutritional and Health status of elderly i. Anthropometric and Body composition Assessment ii. Dietary assessment iii. Clinical Examination iv. Biochemical Assessment v. Functional assessment vi. Various other techniques of assessment of malnutrition in elderly	<b>15</b>
	PRACTICAL Assessment of Nutritional and Health status of elderly Anthropometric and Body composition Assessment Dietary assessment Diet counselling Visits to Old age homes and Senior citizens community	<b>30</b>
<b>Pedagogy</b>	Regular lectures, field visits, ICT enabled learning experiences, Interactive sessions, Group discussion	
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Ahmed, T., &amp; Haboubi, N. (2021). <i>Nutrition in the elderly: A practical approach</i>. Springer.</li> <li>2. Birren, J. E. (1996). <i>Encyclopedia of gerontology: Age, aging, and the aged</i> (Vols. 1–2). Academic Press.</li> <li>3. Bond, J., Coleman, P., &amp; Peace, S. (Eds.). (1993). <i>Ageing in society</i> (2nd ed.). SAGE Publications.</li> <li>4. Bourne, W., &amp; Krauss, S. (1985). <i>The aging body: Physiological change and psychological consequences</i>. Springer-Verlag.</li> </ol>	

	<ol style="list-style-type: none"> <li>5. Cavanagh, J. C. (1990). <i>Adult development and aging</i>. Wadsworth Publishing Company.</li> <li>6. Cockerham, W. C. (1991). <i>This aging society</i>. Prentice-Hall.</li> <li>7. Morley, J. E. (2021). <i>Nutrition and the older adult</i> (Updated ed.). CRC Press.</li> <li>8. Sharma, O. P. (2005). <i>Geriatric care: A textbook of geriatrics and gerontology</i>. Viva Books Private Limited.</li> <li>9. Watson, R. R. (2001). <i>Handbook of nutrition in the aged</i> (3rd ed.). CRC Press.</li> <li>10. Watson, R. R., &amp; Preedy, V. R. (Eds.). (2020). <i>Bioactive food as dietary interventions for aging</i>. Academic Press.</li> </ol>
<b>Outcome</b>	<p>The students will be able to :</p> <ol style="list-style-type: none"> <li>1. Explain the various factors leading to physiological changes in the body during ageing.</li> <li>2. Differentiate the impact of overweight and underweight on the ageing process.</li> <li>3. Discuss noncommunicable diseases associated with the ageing process.</li> <li>4. Examine the effects of arthritis, bone disorders, and postmenopausal health issues on the elderly.</li> <li>5. Assess health problems arising from nutrient–drug interactions in older adults.</li> <li>6. Outline the role of nutrients and their requirements during ageing.</li> </ol>



**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSF-402  
**Title of the Course** : Nutraceuticals and Nutrigenomics  
**Number of Credits** : 3+1  
**Effective from AY** : 2026-27

<b>Pre-requisites for the Course:</b>	T Y BSc Home Science with Food, Nutrition and Dietetics specialization	
<b>Course Objectives:</b>	<ol style="list-style-type: none"> <li>To understand the concepts, classification, and significance of nutraceuticals, functional foods, probiotics, prebiotics, and synbiotics in health promotion and disease management.</li> <li>To develop knowledge of bioactive compounds, phytochemicals, their mechanisms of action, safety, and regulatory aspects related to functional foods and nutraceuticals.</li> <li>To understand the role of gut microbiota, nutrient–gene interactions, nutrigenomics, and personalized nutrition in human health and chronic diseases.</li> <li>To develop practical and analytical skills related to evaluation, product development, market analysis, and research in nutraceuticals and functional foods.</li> </ol>	
<b>Content:</b>		<b>No of Hours</b>
	<b>UNIT -I</b> Nutraceuticals and functional Foods –Definition, concept, history and market; Evolution of nutraceuticals and functional foods in the market. Classification of nutraceuticals and functional foods. Significance and relevance of nutraceuticals and functional foods in the management of diseases and disorders.	<b>10</b>
	<b>UNIT -II</b> Natural occurrence of certain phytochemicals- Antioxidants and flavonoids: omega – 3 fatty acids, carotenoids, dietary fiber, phytoestrogens; glucosinates; organosulphur compounds. Dosage for effective control of disease or health benefit with adequate safety; studies with animals and humans; acute and chronic studies. Regulatory issues.	<b>10</b>
	<b>UNIT -III</b> Prebiotics, probiotics and symbiotics Probiotics: Definition, types and relevance; Usefulness in gastro intestinal health and other health benefits; development of a probiotic products; recent advances in probiotics; Challenges and regulatory issues related to probiotic products. Prebiotics: Prebiotic ingredients in foods; types of prebiotics and their effects on gut microbes; health benefits of prebiotics; recent development in prebiotics. Symbiotics.	<b>13</b>
	<b>UNIT -IV</b> Nutrigenomics: Nutrigenomics- science and concept, Role of Nutrients in gene expression, Nutrigenomics and microbioma, Scope and Importance to Human Health ,concept of personalized medicine. basic concepts of nutrigenomics and complex diseases – diabetes, cancer and obesity	<b>12</b>
<b>PRACTICAL</b> <ol style="list-style-type: none"> <li>Survey on awareness, consumption patterns, and perceived health benefits of nutraceuticals and functional foods among different population groups.</li> <li>Identification, classification, and label analysis of nutraceutical and functional food products available in the market.</li> <li>Study of prebiotic and probiotic foods available in the local market with evaluation of ingredients, health claims, and regulatory labeling.</li> <li>Assessment of consumption patterns and consumer preferences for prebiotic, probiotic, and synbiotic foods.</li> </ol>	<b>30</b>	

	<ol style="list-style-type: none"> <li>5. Estimation of antioxidant activity in selected functional foods and beverages using standard assays. ( Demonstration)</li> <li>6. Extraction and qualitative analysis of phytochemicals such as flavonoids, carotenoids, and phenolic compounds from plant foods. (Demonstration)</li> <li>7. Development and sensory evaluation of a functional food/probiotic food product.</li> <li>8. Visits to industries/units manufacturing nutraceuticals, probiotics, or functional foods and preparation of field reports.</li> <li>9. Visit to a laboratory/research centre involved in nutrigenomics or personalized nutrition testing and documentation of observations.</li> </ol>
<b>Pedagogy</b>	<ul style="list-style-type: none"> <li>• Regular lectures, Field visits, Group discussion,</li> <li>• ICT enabled learning experiences</li> </ul>
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Bashir, K., Jan, K., &amp; Ahmad, F. J. (Eds.). (2024). <i>Functional foods and nutraceuticals: Chemistry, health benefits and the way forward</i>. Springer.</li> <li>2. Gupta, P. C., Bhattacharyya, S., Sharma, N., &amp; Kesharwani, R. K. (Eds.). (2024). <i>Micronutrients and macronutrients as nutraceuticals</i>. Apple Academic Press.</li> <li>3. Kesharwani, R. K., Keservani, R. K., &amp; Sharma, A. K. (Eds.). (2022). <i>Nutraceuticals and functional foods in immunomodulators</i>. Springer.</li> <li>4. Keservani, R. K., Ahire, E. D., Khairnar, S. J., Kshirsagar, S. J., &amp; Kesharwani, R. K. (Eds.). (2024). <i>Nutrigenomics and nutraceuticals</i>. Apple Academic Press.</li> <li>5. Narasinga Rao, B. S. (2005). <i>Nutrition research in India: A country report</i>. Indian National Science Academy (INSA), New Delhi.</li> <li>6. Riar, C. S., &amp; Panesar, P. S. (Eds.). (2024). <i>Bioactive compounds and nutraceuticals from dairy, marine, and nonconventional sources: Extraction, technology and health prospects</i>. Apple Academic Press.</li> <li>7. Simopoulos, A. P., &amp; Ordovas, J. M. (2004). <i>Nutrigenetics and nutrigenomics</i> (Vol. 93). Karger, Switzerland.</li> <li>8. Tai, E. S., &amp; Gillies, P. J. (2007). <i>Nutrigenomics: Opportunities in Asia</i>. Karger, Singapore.</li> <li>9. Tamime, A. (2005). <i>Probiotic dairy products</i>. Blackwell Publishing Ltd., UK.</li> <li>10. Watson, D. H. (2003). <i>Performance functional foods</i>. CRC Press &amp; Woodhead Publishing Ltd., England.</li> <li>11. Webb, G. P. (2006). <i>Dietary supplementation and functional foods</i>. Blackwell Publishing Ltd., New York.</li> </ol>
<b>Outcome</b>	<p>The students will be able to</p> <ol style="list-style-type: none"> <li>1. Explain the concepts, classification, and applications of nutraceuticals, functional foods, probiotics, prebiotics, and synbiotics.</li> <li>2. Describe the role of bioactive compounds and phytochemicals in health promotion and disease prevention.</li> <li>3. Analyze the significance of probiotics, prebiotics, gut microbiota, and synbiotics in maintaining human health.</li> <li>4. Interpret the principles of nutrigenomics, personalized nutrition, and nutrient–gene interactions in relation to chronic diseases.</li> <li>5. Evaluate the safety, efficacy, regulatory aspects, and market trends of nutraceutical and functional food products.</li> <li>6. Demonstrate practical skills in product evaluation, phytochemical analysis, surveys, and development of functional food products..</li> </ol>

**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSF-403  
**Title of the Course** : **Advanced Physiological Biochemistry**  
**Number of Credits** : 4+0  
**Effective from AY** : 2026-27

<b>Pre-requisites for the Course:</b>	T Y BSc Home Science with Food, Nutrition and Dietetics specialization	
<b>Course Objectives:</b>	1. Develop a foundational understanding of human body organization at the biochemical level. 2. Examine the metabolic pathways of carbohydrates, lipids, proteins in human physiology. 3. Explore regulatory mechanisms governing metabolic pathways and their integration.	
<b>Content:</b>		<b>No. of Hours</b>
	<b>Unit 1: Cellular Biochemistry and Regulatory Mechanisms</b> Structure and composition of cell membranes; transport mechanisms of metabolites Acid–base balance and its physiological regulation Enzymes: classification, specificity, regulation, and clinical significance Enzyme kinetics: monosubstrate and bisubstrate reactions, including inhibition Detoxification mechanisms: metabolism of xenobiotics (Phase I and Phase II reactions) Cell signalling pathways: Overview of extracellular signalling G-protein coupled receptors and enzyme-linked receptors Second messengers and MAP kinase pathways Free radicals, reactive oxygen species (ROS), and oxidative stress	<b>10</b>
	<b>Unit 2: Metabolism of Macronutrients</b> <b>Carbohydrate Metabolism</b> Cellular uptake and metabolism of glucose Glycogen metabolism and its regulation Multi-level regulation: substrate, enzyme, hormonal, and organ level Disorders of carbohydrate metabolism Glycoproteins and proteoglycans: structure, classification, and functions <b>Lipid Metabolism</b> Cellular lipid metabolism: Oxidation of Fatty acids- Saturated and Unsaturated Fatty acid synthesis (de novo) Metabolism of unsaturated fatty acids, Cholesterol, phospholipids, and triacylglycerol. Lipoprotein metabolism: VLDL, LDL (forward transport), HDL (reverse transport) Regulation of lipid metabolism Disorders: dyslipidemia and lipid storage diseases <b>Protein Metabolism</b> Amino acid metabolism: biosynthesis and catabolism Urea cycle, transamination, and one-carbon metabolism Formation of glucose, ketone bodies, and energy from amino acids Creatine and creatinine metabolism Plasma proteins: properties and functions Biologically active peptides and transport proteins Inborn errors of amino acid metabolism	<b>20</b>
	<b>Unit 3: Intermediary Metabolism and Energy Production</b> Principles of metabolic regulation:	<b>15</b>

	<p>Equilibrium and non-equilibrium reactions          Committed steps and allosteric regulation          Covalent modification and hormonal control          Crossover theorem, starve–fed cycle, caloric homeostasis, futile cycles          Tricarboxylic Acid (TCA) Cycle          Biological oxidation:          Electron transport chain (ETC)          Oxidative phosphorylation</p>	
	<p><b>Unit 4: Nucleic Acids and Molecular Biology</b>          Metabolism of purines and pyrimidines          Role of nucleotides in metabolism          Structure and function of nucleic acids          DNA metabolism: replication, mutation, repair, and recombination          RNA metabolism          Disorders of nucleic acid metabolism          Protein biosynthesis: transcription, translation, and post-translational modifications          Regulation of gene expression          Inhibitors of protein synthesis          Mitochondrial gene expression          Introduction to systems biology: metabolomics and proteomics</p>	<b>15</b>
<b>Pedagogy</b>	<ul style="list-style-type: none"> <li>• Regular lectures, Group discussion,</li> <li>• ICT enabled learning experiences</li> </ul>	
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Berg, J. M., Tymoczko, J. L., Gatto, G. J., &amp; Stryer, L. (2019). <i>Biochemistry</i> (9th ed.). W.H. Freeman and Company.</li> <li>2. Devlin, T. M. (2019). <i>Textbook of biochemistry with clinical correlations</i> (8th ed.). Wiley.</li> <li>3. Ferrier, D. R. (2022). <i>Lippincott illustrated reviews: Biochemistry</i> (8th ed.). Wolters Kluwer.</li> <li>4. Harper, H. A., Murray, R. K., Bender, D. A., Botham, K. M., Kennelly, P. J., &amp; Rodwell, V. W. (2021). <i>Harper’s illustrated biochemistry</i> (32nd ed.). McGraw-Hill Education.</li> <li>5. Nelson, D. L., &amp; Cox, M. M. (2021). <i>Lehninger principles of biochemistry</i> (8th ed.). W.H. Freeman and Company.</li> <li>6. Salway, J. G. (2017). <i>Metabolism at a glance</i> (4th ed.). Wiley-Blackwell.</li> <li>7. Voet, D., Voet, J. G., &amp; Pratt, C. W. (2019). <i>Fundamentals of biochemistry: Life at the molecular level</i> (6th ed.). Wiley.</li> <li>8. Watson, J. D., Baker, T. A., Bell, S. P., Gann, A., Levine, M., &amp; Losick, R. (2014). <i>Molecular biology of the gene</i> (7th ed.). Pearson.</li> </ol>	
<b>Outcome</b>	<p>Students will be able to</p> <ol style="list-style-type: none"> <li>1. Explain the regulatory mechanisms controlling metabolic pathways in the human body.</li> <li>2. Describe the major biochemical pathways involved in the metabolism of carbohydrates, proteins, and lipids.</li> <li>3. Analyze the interrelationships and integration of metabolic pathways in maintaining metabolic homeostasis.</li> <li>4. Relate alterations in cellular metabolism to nutritional disorders and metabolic imbalances.</li> <li>5. Evaluate the application of biochemical techniques in the study and investigation of metabolic processes.</li> </ol>	

**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSF-411  
**Title of the Course** : Food Quality Analysis  
**Number of Credits** : 2 T+2P  
**Effective from AY** : 2026-27

<b>Pre-requisites for the Course:</b>	T Y BSc Home Science with Food, Nutrition and Dietetics specialization	
<b>Course Objectives:</b>	<ul style="list-style-type: none"> <li>To introduce students to food analysis</li> <li>To learn compositional analysis of foods</li> </ul>	
<b>Content:</b>		<b>No of Hours</b>
	<b>Unit I Introduction to Food Analysis</b> a) Trends and demand, consumer and food industry, steps in analysis, choice and validity of method, criteria for choice of food analysis methods, role of AOAC International b) Sampling and sample preparation. c) Brief overview of physical, chemical, Instrumental and Gravimetric methods of analysis. <b>B. Compositional Analysis of foods</b> a) Moisture and total solid analysis, ash analysis b) Total fiber analysis c) Protein analysis d) Carbohydrate analysis (mono, oligo and polysaccharides, starch and starch derivatives) e) Vitamin and mineral analysis	<b>10</b>
	<b>Unit II. Chemical properties and characteristics of foods</b> a) pH and titrable acidity b) Fat characterization – Analysis of fatty acids, oil fat indices. c) Protein separation, characterization procedures, amino acid composition, Application of enzymes in food analysis, Immunoassays d) Spectroscopy – Basic principles of spectroscopy, ultra violet, visible and fluorescence spectroscopy. Atomic absorption and emission spectroscopy	<b>10</b>
	<b>Unit III</b> Physical properties of foods Chromatographic techniques a) Principles of chromatography b) Types of chromatographic techniques – HPLC, Gas chromatography Rheological principles used for food analysis a) Viscosity of liquids b) Solutions and fine suspensions Pigments and colourants a) Extraction, isolation, purification b) Measurements of natural pigments and colour analysis E. Thermal Analysis a) Principles and procedures of calorimetry b) Differential scanning of calorimeters.	<b>10</b>
	<b>Sensory Analysis of foods</b> Physiological basis of sensory evaluation and sensory attributes of food. Sensory evaluation: assessment, subjective and objective Sensory evaluation of foods	
<b>PRACTICAL</b> 1. Sampling and sample preparation techniques for qualitative and quantitative analysis of food samples. 2. Determination of moisture content, total solids, and ash content in different food products. 3. Estimation of crude fibre and dietary fibre in selected food samples. 4. Quantitative estimation of protein content in foods using Kjeldahl/Lowry method. 5. Estimation of carbohydrates and reducing sugars in foods using standard analytical methods. 6. Determination of pH and titratable acidity of foods and beverages.	<b>60</b>	

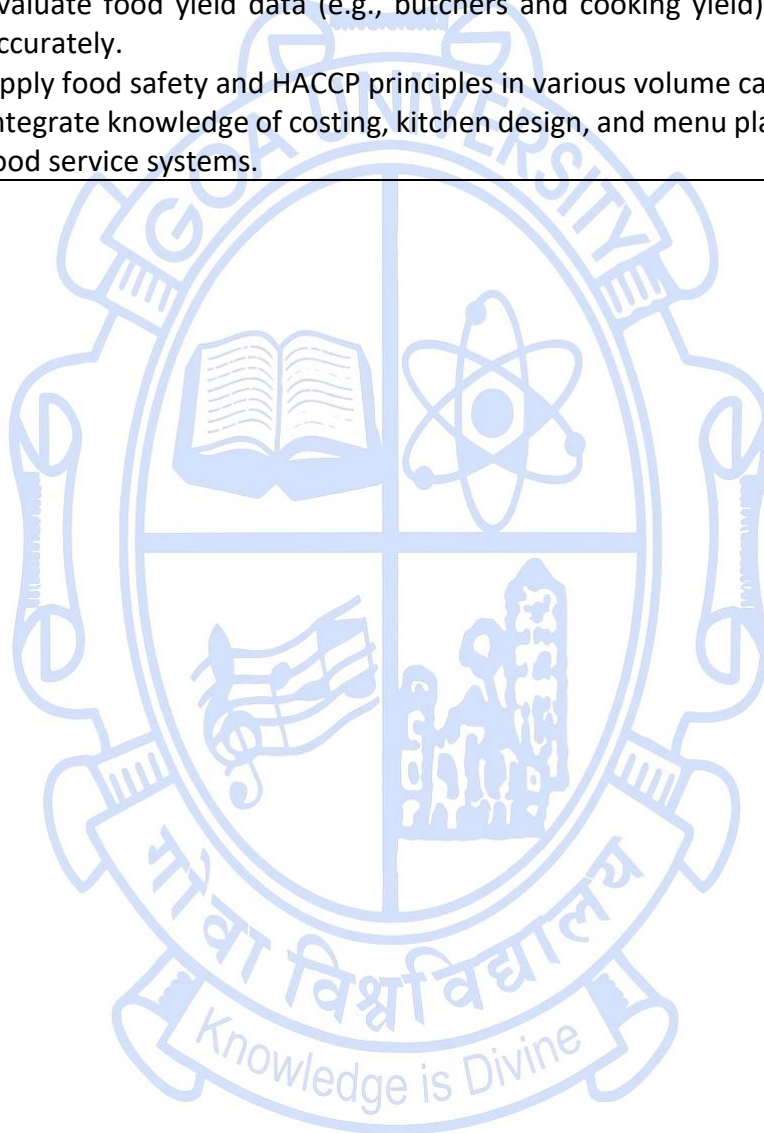
	<ol style="list-style-type: none"> <li>7. Analysis of physicochemical properties of fats and oils including acid value, peroxide value, saponification value, and iodine value.</li> <li>8. Extraction, separation, and identification of natural food pigments using chromatographic techniques.</li> <li>9. Determination of viscosity and rheological behaviour of liquid and semi-solid foods.</li> <li>10. Sensory evaluation of food products using hedonic rating, ranking, difference, and score card methods.</li> <li>11. Visits to Food Analytical laboratories ( a report to be submitted)</li> </ol>
<b>Pedagogy</b>	Regular lectures, Field visits, Group discussions, ICT-enabled learning experiences,
<b>References/ Readings:</b>	<p>References</p> <ol style="list-style-type: none"> <li>1. AOAC International. (2019). <i>Official methods of analysis</i> (21st ed.). AOAC International.</li> <li>2. Damodaran, S., Parkin, K. L., &amp; Fennema, O. R. (2017). <i>Fennema's food chemistry</i> (5th ed.). CRC Press.</li> <li>3. deMan, J. M. (2018). <i>Principles of food chemistry</i> (4th ed.). Springer.</li> <li>4. Nielsen, S. S. (2017). <i>Food analysis</i> (5th ed.). Springer.</li> <li>5. Nollet, L. M. L., &amp; Toldrá, F. (Eds.). (2020). <i>Handbook of food analysis</i> (3rd ed.). CRC Press.</li> <li>6. Ranganna, S. (2010). <i>Handbook of analysis and quality control for fruit and vegetable products</i> (2nd ed.). Tata McGraw-Hill.</li> <li>7. Skoog, D. A., Holler, F. J., &amp; Crouch, S. R. (2018). <i>Principles of instrumental analysis</i> (7th ed.). Cengage Learning</li> </ol>
<b>Outcome</b>	<p>The student will be able to</p> <ol style="list-style-type: none"> <li>1. Explain the principles and methods used in food analysis, including sampling and sample preparation.</li> <li>2. Describe compositional analysis of foods such as moisture, ash, protein, carbohydrates, vitamins, and minerals.</li> <li>3. Apply chemical methods to determine properties like pH, acidity, and fat characteristics in foods.</li> <li>4. Analyze food components using instrumental techniques such as spectroscopy and chromatography.</li> <li>5. Evaluate physical and sensory properties of foods using rheological and sensory analysis methods.</li> <li>6. Perform laboratory analysis of food components and interpret the results accurately.</li> </ol>

**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSF-412  
**Title of the Course** : Quantity Food Production  
**Number of Credits** : 3T+1P  
**Effective from AY** : 2025-26

<b>Pre-requisites for the Course:</b>	SY BSc Home Science	
<b>Course Objectives:</b>	1. To understand quantity food production for Institution and industrial catering 2. To learn the principles of Purchasing and indenting for volume catering 3. To understand food costing	
<b>Content:</b>		<b>No of Hours</b>
	<b>Unit I: Introduction to Quantity Food Production and Equipment</b> <ul style="list-style-type: none"> <li>• Overview of large-scale food production: industrial, commercial, and institutional (e.g., hospitals, hostels, schools)</li> <li>• Role and importance of equipment in volume cookery</li> <li>• Classification and selection of kitchen equipment for quantity cooking</li> <li>• Materials used in manufacturing kitchen equipment</li> <li>• Modern advancements in kitchen equipment technology</li> <li>• Maintenance and care of kitchen equipment</li> </ul>	<b>10</b>
	<b>Unit II: Types of Volume Catering Establishments</b> <ul style="list-style-type: none"> <li>• Classification: Commercial vs Institutional catering</li> <li>• Industrial and Institutional food service operations</li> <li>• Specialized catering services:               <ul style="list-style-type: none"> <li>○ Hospital catering and therapeutic diets</li> <li>○ Off-premises catering</li> <li>○ Airline catering</li> <li>○ Railway catering</li> <li>○ Marine (cruise) catering</li> <li>○ Theme dinners and large-scale hostel catering</li> </ul> </li> <li>• Basics of HACCP (Hazard Analysis and Critical Control Points) in institutional kitchens</li> <li>• Menu planning for different catering types and clientele</li> </ul>	<b>10</b>
	<b>Unit III: Purchasing, Indenting, and Kitchen Planning</b> <ul style="list-style-type: none"> <li>• Principles of indenting and portion size determination for mass feeding</li> <li>• Purchase systems: centralized vs decentralized, specifications and vendor selection</li> <li>• Bulk storage: types of storerooms, conditions for storage, FIFO &amp; FEFO</li> <li>• Inventory control techniques: stock records, inventory turnover, spoilage control</li> <li>• Kitchen layout for volume cooking:               <ul style="list-style-type: none"> <li>○ Basic principles of kitchen design</li> <li>○ Common layouts (island, straight-line, parallel, L-shape, U-shape)</li> <li>○ Efficient space and workflow management</li> </ul> </li> <li>• Equipment selection based on operation scale and menu</li> </ul>	<b>10</b>
	<b>Unit IV: Food Costing and Control</b> <ul style="list-style-type: none"> <li>• Menu pricing: styles and factors influencing pricing decisions</li> <li>• Types of menus and their impact on costing</li> <li>• Costing essentials:               <ul style="list-style-type: none"> <li>○ Importance and methods of food costing</li> <li>○ Use and development of standard recipes</li> <li>○ Adjustment factor for quantity changes</li> </ul> </li> </ul>	<b>15</b>

	<ul style="list-style-type: none"> <li>• Material costing: <ul style="list-style-type: none"> <li>○ Cost flow from purchasing to sales</li> <li>○ Receiving, issuing, production tracking</li> </ul> </li> <li>• Control systems: <ul style="list-style-type: none"> <li>○ Monitoring food, labor, and overhead costs</li> <li>○ Preventing wastage and pilferage</li> </ul> </li> <li>• Yield analysis: <ul style="list-style-type: none"> <li>○ Butcher's yield, cooking yield, and portion control</li> <li>○ Calculating standard food cost, portion cost, and meal cost</li> </ul> </li> </ul>	
	<p>Practical</p> <ol style="list-style-type: none"> <li>1. Identification and Use of Quantity Kitchen Equipment <ul style="list-style-type: none"> <li>○ Study of various equipment used in bulk cooking and their functional uses.</li> </ul> </li> <li>2. Standardization and Adjustment of Recipes for Volume Cooking <ul style="list-style-type: none"> <li>○ Practice in converting a basic recipe into 50 and 100-portion yields using adjustment factors.</li> </ul> </li> <li>3. Menu Planning for Institutional and Industrial Catering <ul style="list-style-type: none"> <li>○ Planning nutritionally balanced menus for hospitals, hostels, and industrial workers.</li> </ul> </li> <li>4. Purchasing, Indenting, and Storage Management <ul style="list-style-type: none"> <li>○ Preparing indents, understanding storage practices, and basic inventory control techniques.</li> </ul> </li> <li>5. Portion Control and Food Costing Exercise <ul style="list-style-type: none"> <li>○ Learning portioning techniques and calculating meal cost and food cost per portion.</li> </ul> </li> <li>6. Visit to a Volume Catering Establishment / Case Study Report <ul style="list-style-type: none"> <li>○ Observation of workflow, kitchen setup, and service system; submission of a brief report.</li> </ul> </li> </ol>	<b>30</b>
<b>Pedagogy</b>	<ul style="list-style-type: none"> <li>• Regular lectures, Field visits, Group discussion, debates,</li> <li>• ICT enabled learning experiences</li> <li>• Analyzing evaluating You tube videos 30 hrs</li> </ul>	
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Bali, P. S. (2011). <i>Quantity food production operations and Indian cuisine</i>. Oxford University Press.</li> <li>2. Birchfield, J. C. (2008). <i>Design and layout of foodservice facilities</i> (3rd ed.). Wiley.</li> <li>3. Kinton, R., &amp; Ceserani, V. (2007). <i>The theory of catering</i> (11th ed.). Hodder Education.</li> <li>4. Knight, J. B., &amp; Kotschevar, L. H. (2000). <i>Foodservice organizations: A managerial and systems approach</i> (4th ed.). Prentice Hall.</li> <li>5. Kotschevar, L. H., &amp; Terrell, M. E. (2011). <i>Quantity food production, planning, and management</i> (3rd ed.). Wiley.</li> <li>6. Payne-Palacio, J., &amp; Theis, M. (2015). <i>Foodservice management: Principles and practices</i> (13th ed.). Pearson.</li> <li>7. Reynolds, D. (2011). <i>Hospitality services: Food and beverage operations</i>. Cengage Learning.</li> <li>8. Sethi, M., &amp; Malhan, S. (2015). <i>Catering management: An integrated approach</i> (3rd ed.). New Age International Publishers.</li> <li>9. Singh, U. (2018). <i>Food production operations</i> (2nd ed.). Oxford University Press.</li> <li>10. Spears, M. C. (2000). <i>Foodservice organizations: A managerial and systems approach</i> (5th ed.). Prentice Hall.</li> <li>11. Thangam, P. (2002). <i>Modern cookery for teaching and the trade</i> (6th ed.). Orient Longman.</li> <li>12. West, B. B., Woods, P. R., Harger, V., &amp; Shugart, G. (2001). <i>Food service in institutions</i> (6th ed.). Macmillan.</li> </ol>	

<p><b>Course Outcomes</b></p>	<p><b>The students will be able to</b></p> <ol style="list-style-type: none"> <li>1. Describe the scope and settings of quantity food production in industrial, commercial, and institutional setups.</li> <li>2. Identify and explain the use, care, and modern trends in kitchen equipment for volume food production.</li> <li>3. Compare different types of volume catering establishments and apply menu planning principles to specialized services.</li> <li>4. Apply the principles of indenting, purchasing, and storage for large-scale food production.</li> <li>5. Analyze and plan efficient kitchen layouts based on workflow and equipment needs.</li> <li>6. Demonstrate understanding of food cost control systems and pricing methods.</li> <li>7. Use standardized recipes and apply adjustment factors in quantity food production.</li> <li>8. Evaluate food yield data (e.g., butchers and cooking yield) and calculate meal costs accurately.</li> <li>9. Apply food safety and HACCP principles in various volume catering operations.</li> <li>10. Integrate knowledge of costing, kitchen design, and menu planning to develop efficient food service systems.</li> </ol>
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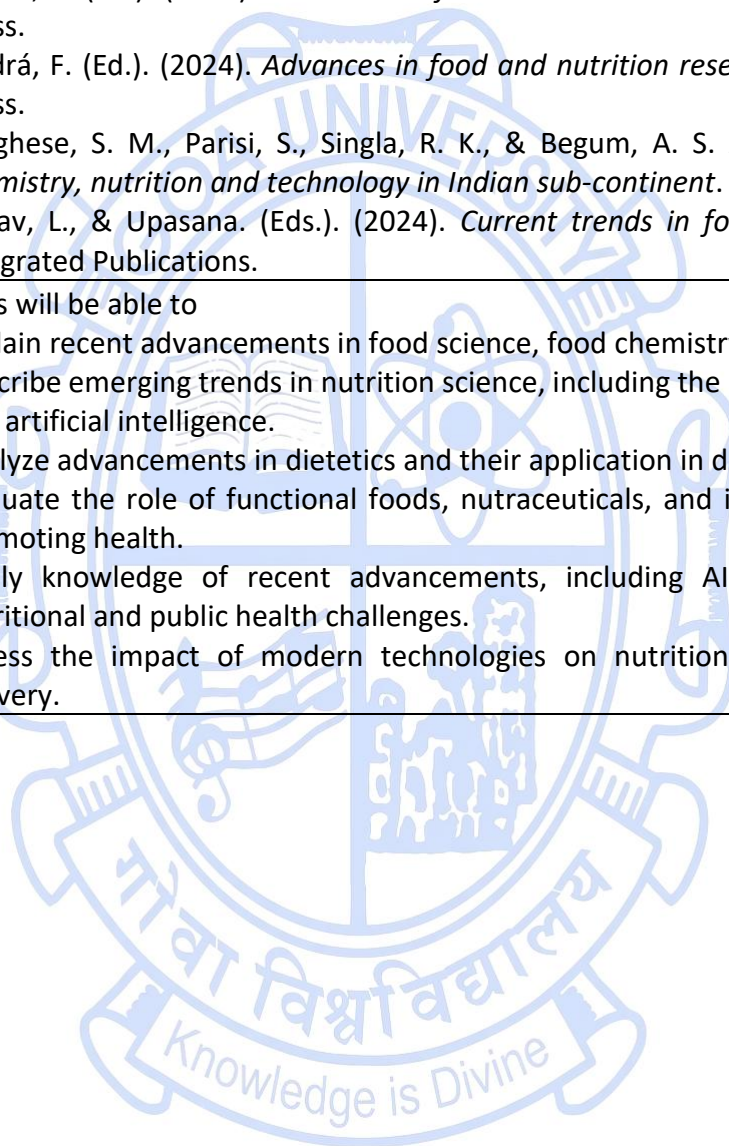


**SEMESTER VIII**

**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSF-404  
**Title of the Course** : Recent advances in Food, Nutrition & Dietetics  
**Number of Credits** : (4 T)  
**Effective from AY** : 2026-27

<b>Pre-requisites for the Course:</b>	T Y BSc Home Science with Food, Nutrition and Dietetics specialization	
<b>Course Objectives:</b>	<ol style="list-style-type: none"> <li>To understand recent advances and emerging trends in food science, nutrition, public health nutrition, and dietetics.</li> <li>To develop knowledge of functional foods, nutraceuticals, novel food ingredients, and modern food processing and analytical techniques.</li> <li>To familiarize students with the applications of artificial intelligence, digital technologies, and smart systems in food and nutrition sectors.</li> <li>To enhance analytical and professional skills related to precision nutrition, evidence-based dietetics, and technology-driven nutrition interventions.</li> </ol>	
<b>Content:</b>		<b>No of Hours</b>
	<b>Unit 1: Recent Advances in Food Science</b> <ul style="list-style-type: none"> <li>Novel food ingredients: plant-based foods, alternative proteins, fermented and sustainable food sources</li> <li>Food fortification and biofortification: recent developments and applications</li> <li>Artificial intelligence in food product development, sensory evaluation, and quality control</li> <li>Smart food systems, digital innovations, and sustainable approaches in food industries</li> </ul>	<b>10</b>
	<b>Unit 2: Recent Advances in Food Chemistry</b> <ul style="list-style-type: none"> <li>Bioactive compounds and antioxidants</li> <li>Advances in food analysis techniques</li> <li>Role of AI in food analysis and quality prediction</li> <li>Food safety monitoring using intelligent systems</li> </ul>	<b>10</b>
	<b>Unit 3: Recent Advances in Food Technology</b> <ul style="list-style-type: none"> <li>Modern processing techniques (HPP, PEF, cold plasma)</li> <li>Smart and active packaging</li> <li>Automation and AI in food processing industries</li> <li>Digitalization and Industry 4.0 in food sector</li> </ul>	<b>10</b>
	<b>Unit 4: Recent Advances in Nutrition Science</b> <ul style="list-style-type: none"> <li>Precision nutrition and personalized diets</li> <li>Role of gut microbiome</li> <li>AI in nutrition assessment and dietary analysis</li> <li>Mobile apps and wearable devices for nutrition tracking</li> </ul>	<b>10</b>
	<b>Unit 5: Recent Advances in Public Health Nutrition</b> <ul style="list-style-type: none"> <li>Technology-based nutrition interventions</li> <li>AI and big data in public health nutrition planning</li> <li>Digital tools for monitoring nutrition programs</li> <li>Behaviour change communication using digital platforms</li> </ul>	<b>10</b>
<b>Unit 6: Recent Advances in Dietetics</b> <ul style="list-style-type: none"> <li>Evidence-based dietetics</li> <li>AI-assisted diet planning and clinical decision support</li> <li>Tele-nutrition and digital counselling</li> </ul>	<b>10</b>	

	<ul style="list-style-type: none"> <li>• Use of apps and software in diet therapy</li> </ul>
<b>Pedagogy</b>	Regular lectures, Group discussions, ICT-enabled learning experiences,
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Bagchi, D., &amp; Nair, S. (Eds.). (2021). <i>Nutraceutical and functional food regulations in the United States and around the world</i> (3rd ed.). Academic Press.</li> <li>2. Bhat, R. (Ed.). (2022). <i>Future foods: Global trends, opportunities, and sustainability challenges</i>. Academic Press.</li> <li>3. Gajalakshmi, R. (2024). <i>Nutrition science</i> (2nd ed.). CBS Publishers &amp; Distributors.</li> <li>4. Goyal, M. R., &amp; Suleria, H. A. R. (Eds.). (2024). <i>Functional foods and nutraceuticals: Processing, technologies, and health benefits</i>. Apple Academic Press.</li> <li>5. Gupta, R. C. (Ed.). (2023). <i>Nutraceuticals: Efficacy, safety and toxicity</i> (2nd ed.). Academic Press.</li> <li>6. Toldrá, F. (Ed.). (2021). <i>Advances in food and nutrition research</i> (Vol. 97). Academic Press.</li> <li>7. Toldrá, F. (Ed.). (2024). <i>Advances in food and nutrition research</i> (Vol. 110). Academic Press.</li> <li>8. Varghese, S. M., Parisi, S., Singla, R. K., &amp; Begum, A. S. A. (2022). <i>Trends in food chemistry, nutrition and technology in Indian sub-continent</i>. Springer.</li> <li>9. Yadav, L., &amp; Upasana. (Eds.). (2024). <i>Current trends in food and nutrition</i> (Vol. 4). Integrated Publications.</li> </ol>
<b>Outcome</b>	<p>Students will be able to</p> <ol style="list-style-type: none"> <li>1. Explain recent advancements in food science, food chemistry, and food technology.</li> <li>2. Describe emerging trends in nutrition science, including the role of digital technologies and artificial intelligence.</li> <li>3. Analyze advancements in dietetics and their application in disease management.</li> <li>4. Evaluate the role of functional foods, nutraceuticals, and innovative technologies in promoting health.</li> <li>5. Apply knowledge of recent advancements, including AI-based tools, to address nutritional and public health challenges.</li> <li>6. Assess the impact of modern technologies on nutrition practice and healthcare delivery.</li> </ol>

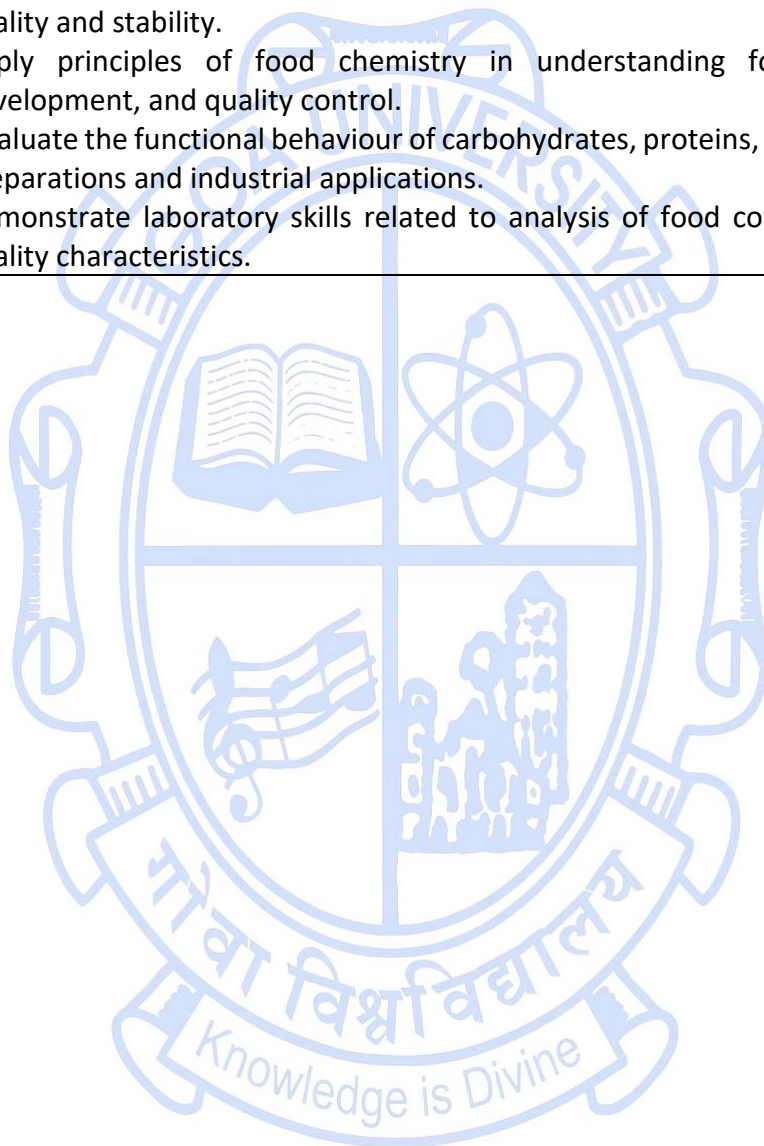


**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSF-405  
**Title of the Course** : Food Chemistry  
**Number of Credits** : 3 T+1P  
**Effective from AY** : 2026-27

<b>Pre-requisites for the Course:</b>	TY BSc Home Science with Food, Nutrition and Dietetics specialization	
<b>Course Objectives:</b>	<ul style="list-style-type: none"> <li>To understand the chemistry, composition, structure, and interactions of major food components in food systems.</li> <li>To study the functional properties of food constituents and the chemical and biochemical changes occurring during food processing, preparation, and storage.</li> <li>To gain knowledge of the role of enzymes, additives, flavours, pigments, and processing treatments in influencing food quality, stability, and product development.</li> </ul>	
<b>Content:</b>		<b>No of Hours</b>
	<b>Unit I: Water and Carbohydrates in Food Systems</b> Chemistry and structure of water; physical properties of water including specific heat, latent heat, vapour pressure, and boiling point. Water as a dispersing medium; states of water in foods; water activity and its significance in food systems. Role of water in food preparation, processing, preservation, and storage. Structure, classification, and chemistry of carbohydrates: monosaccharides, disaccharides, oligosaccharides, and polysaccharides; stereoisomerism and ring structures. Functional and chemical properties of sugars including hydrolysis, caramelization, and Maillard browning reaction. Structure and functional properties of starch: gelatinization, pasting, syneresis, retrogradation, dextrinization, and factors affecting starch behaviour. Modified and resistant starches and their food applications. Gums, hydrocolloids, and pectic substances: sources, functional properties, gel formation, and applications in foods.	<b>12</b>
	<b>Unit II: Proteins and Lipids in Food Systems</b> Chemistry of proteins and amino acids; structural organization and classification of proteins. Functional properties of proteins including amphotericism, isoelectric point, hydration, hydrolysis, denaturation, coagulation, gelation, emulsification, foaming, and texturization. Gluten complex formation and its applications in food processing. Chemistry and classification of lipids; structure and composition of fats and fatty acids. Physical and chemical properties of fats including crystallization, polymorphism, melting behaviour, plasticity, oxidative and hydrolytic rancidity, and thermal degradation. Modification of fats through hydrogenation, interesterification, and winterization. Functional roles of fats and fat replacers in foods.	<b>12</b>
	<b>Unit III: Food Enzymes, Flavours, and Pigments</b> Classification and mechanism of enzyme action; enzyme specificity and factors affecting enzyme activity. Applications of endogenous and exogenous enzymes in food processing including amylases, proteases, lipases, polyphenol oxidases, peroxidases, and lipoxygenases. Chemistry and molecular mechanisms of flavour perception including sweet, bitter, salty, sour, umami, kokumi, pungent, cooling, and astringent sensations. Flavour compounds in vegetables, fruits, spices, fats, oils, milk, meat, and processed foods. Chemistry, stability, and applications of pigments in plant and animal tissues including chlorophylls, carotenoids, anthocyanins, betalains, and haem pigments. Synthetic food colours: toxicity and regulatory aspects.	<b>7</b>
	<b>Unit IV: Food Additives and Functional Ingredients</b> Classification, functions, and applications of food additives including buffer systems, salts, chelating agents, antioxidants, antimicrobials, sweeteners, fat replacers,	<b>6</b>

	texturizers, clarifying agents, bleaching agents, flour improvers, anti-caking agents, gases, and propellants. Functional ingredients and their role in food quality, stability, shelf life, and sensory characteristics. Regulatory and safety aspects of food additives.	
	<p><b>Unit V: Chemistry of Foods and Beverages</b></p> <p>Chemical composition and biochemical changes during post-harvest handling, slaughter, storage, processing, and preservation of foods. Chemistry of cereals and cereal products, legumes, fruits and vegetables, milk and milk products, eggs, meat, and fish.</p> <p>Chemistry of beverages including tea, coffee, cocoa, beer, wine, and vinegar with emphasis on processing-induced chemical changes, flavour development, and quality characteristics.</p>	<b>8</b>
	<p><b>Practical</b></p> <ol style="list-style-type: none"> <li>1. Determination of moisture content of different foods</li> <li>2. Study of caramelization and Maillard reaction in foods under different processing conditions.</li> <li>3. Evaluation of starch properties: gelatinization, retrogradation, dextrinization, and gel formation.</li> <li>4. Preparation and evaluation of pectin gels and hydrocolloid-based food systems.</li> <li>5. Demonstration of protein denaturation, coagulation, gelation, and gluten development in foods.</li> <li>6. Determination of physicochemical properties of fats and oils such as smoke point, acid value, peroxide value, and rancidity tests.</li> <li>7. Study of enzymatic browning and factors affecting enzyme activity in fruits and vegetables.</li> <li>8. Extraction and identification of natural pigments from plant and animal sources and study of their stability under different conditions.</li> <li>9. Sensory evaluation and identification of flavour components in foods and beverages.</li> <li>10. Analysis of food additives used in processed foods and study of their functional role in food quality and preservation.</li> </ol>	<b>30</b>
<b>Pedagogy</b>	Regular lectures, Field visits, Group discussions, ICT-enabled learning experiences,	
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Belitz, H. D., Grosch, W., &amp; Schieberle, P. (2009). <i>Food chemistry</i> (4th ed.). Springer.</li> <li>2. Coultate, T. P. (2016). <i>Food: The chemistry of its components</i> (6th ed.). Royal Society of Chemistry.</li> <li>3. Damodaran, S., Parkin, K. L., &amp; Fennema, O. R. (2017). <i>Fennema's food chemistry</i> (5th ed.). CRC Press.</li> <li>4. deMan, J. M. (2018). <i>Principles of food chemistry</i> (4th ed.). Springer.</li> <li>5. Eskin, N. A. M., &amp; Shahidi, F. (2013). <i>Biochemistry of foods</i> (3rd ed.). Academic Press.</li> <li>6. Manay, N. S., &amp; Shadaksharaswamy, M. (2021). <i>Foods: Facts and principles</i> (3rd ed.). New Age International Publishers.</li> <li>7. Mudambi, S. R., &amp; Rao, S. M. (2017). <i>Food science</i> (3rd ed.). New Age International Publishers.</li> <li>8. Potter, N. N., &amp; Hotchkiss, J. H. (2012). <i>Food science</i> (5th ed.). CBS Publishers &amp; Distributors.</li> <li>9. Rao, E. S. (2010). <i>Food chemistry</i>. Oxford &amp; IBH Publishing.</li> <li>10. Ramaswamy, H., &amp; Marcotte, M. (2009). <i>Food processing: Principles and applications</i>. CRC Press.</li> <li>11. Sahay, K. M., &amp; Singh, K. K. (2015). <i>Unit operations of agricultural processing</i>. Vikas Publishing House.</li> <li>12. Sharma, H. K., &amp; Kaushal, P. (2016). <i>Food processing and preservation</i>. Daya Publishing House.</li> <li>13. Srilakshmi, B. (2018). <i>Food science</i> (7th ed.). New Age International Publishers.</li> </ol>	

	<p>14. Srivastava, R. P., &amp; Kumar, S. (2018). <i>Fruit and vegetable preservation: Principles and practices</i> (5th ed.). International Book Distributing Co.</p> <p>15. Swaminathan, M. (2015). <i>Food science, chemistry and experimental foods</i>. Bappco Publishers.</p> <p>16. Vaclavik, V. A., &amp; Christian, E. W. (2014). <i>Essentials of food science</i> (4th ed.). Springer.</p> <p>17. Wong, D. W. S. (2018). <i>Mechanism and theory in food chemistry</i> (2nd ed.). Springer.</p>
<p><b>Outcome</b></p>	<p>Student will be able to</p> <ol style="list-style-type: none"> <li>1. Explain the chemistry, structure, and functional properties of major food components in food systems.</li> <li>2. Interpret the physicochemical and biochemical changes occurring in foods during processing, storage, and preservation.</li> <li>3. Analyze the role of water activity, enzymes, pigments, flavours, and additives in food quality and stability.</li> <li>4. Apply principles of food chemistry in understanding food processing, product development, and quality control.</li> <li>5. Evaluate the functional behaviour of carbohydrates, proteins, and lipids in different food preparations and industrial applications.</li> <li>6. Demonstrate laboratory skills related to analysis of food components, reactions, and quality characteristics.</li> </ol>



**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSF-406  
**Title of the Course** : Nutrition in Critical Care  
**Number of Credits** : (3T+1P)  
**Effective from AY** : 2026-27

<b>Pre-requisites for the Course:</b>	TY BSc Home Science with Food, Nutrition and Dietetics specialization	
<b>Course Objectives:</b>	<ol style="list-style-type: none"> <li>1. To provide an understanding of the metabolic response to critical illness and injury.</li> <li>2. To familiarize students with nutritional assessment and support strategies in critical care.</li> <li>3. To develop competencies in planning and managing enteral and parenteral nutrition.</li> <li>4. To examine nutrition interventions for major critical illnesses and organ dysfunction.</li> <li>5. To enable students to monitor and evaluate nutrition support outcomes in critically ill patients.</li> </ol>	
<b>Content:</b>		<b>No of Hours</b>
	<b>Unit I: Nutritional Assessment and Screening in Critical Care</b> Concept and significance of nutritional screening and assessment in critically ill patients. Methods of nutritional assessment including anthropometric, biochemical, clinical, dietary, and functional assessment techniques. Nutritional risk screening tools used in intensive care settings. Role of nutritional support systems and other life-support measures in the management of critically ill patients.	<b>5</b>
	<b>Unit II: Nutritional Support Systems in Critical Care</b> Principles and objectives of nutritional support in critical illness. Enteral and parenteral nutrition support: indications, advantages, limitations, and monitoring. Role of immunonutrition and immuno-enhancers in critical care. Conditionally essential nutrients and immune suppressants in critically ill patients. Specialized therapeutic diets in critical care settings. Complications associated with nutritional support including metabolic complications, infections, and refeeding syndrome. Rehabilitation nutrition and ethical issues related to nutritional care in terminally ill patients.	<b>10</b>
	<b>Unit III: Enteral Nutrition</b> Principles and applications of enteral nutrition. Routes and access sites for enteral feeding. Types of enteral feeding tubes including Ryle's tube and its care and maintenance. Types of enteral feeds: blenderized/home-based feeds and commercial formula feeds; advantages and limitations. Selection and incorporation of easily digestible foods in enteral feeding. Nutritional modifications and nutrient requirements in disease-specific conditions such as renal disorders, respiratory disorders, gastrointestinal disorders, and metabolic stress.	<b>10</b>
	<b>Unit IV: Total Parenteral Nutrition (TPN)</b> Concept, indications, and importance of total parenteral nutrition in critical care. Composition and formulation of TPN solutions including carbohydrates, proteins, lipids, electrolytes, vitamins, and trace elements. Routes and sites for TPN administration and catheter care. Monitoring and complications associated with long-term TPN use including metabolic, infectious, and hepatic complications.	<b>5</b>
	<b>Unit V: Pathophysiology and Nutritional Management in Critical Illness</b> Pathophysiological, clinical, and metabolic alterations in critically ill patients. Nutritional goals, assessment, monitoring, and therapeutic strategies in critical illnesses. Nutritional management in cardiovascular complications, stroke, surgery, dialysis, respiratory failure, multiple organ dysfunction syndrome, cancer, hepatic failure, gastrointestinal surgery and related complications, neurosurgery, stress, trauma, sepsis, burns, and diabetic ketoacidosis.	<b>15</b>

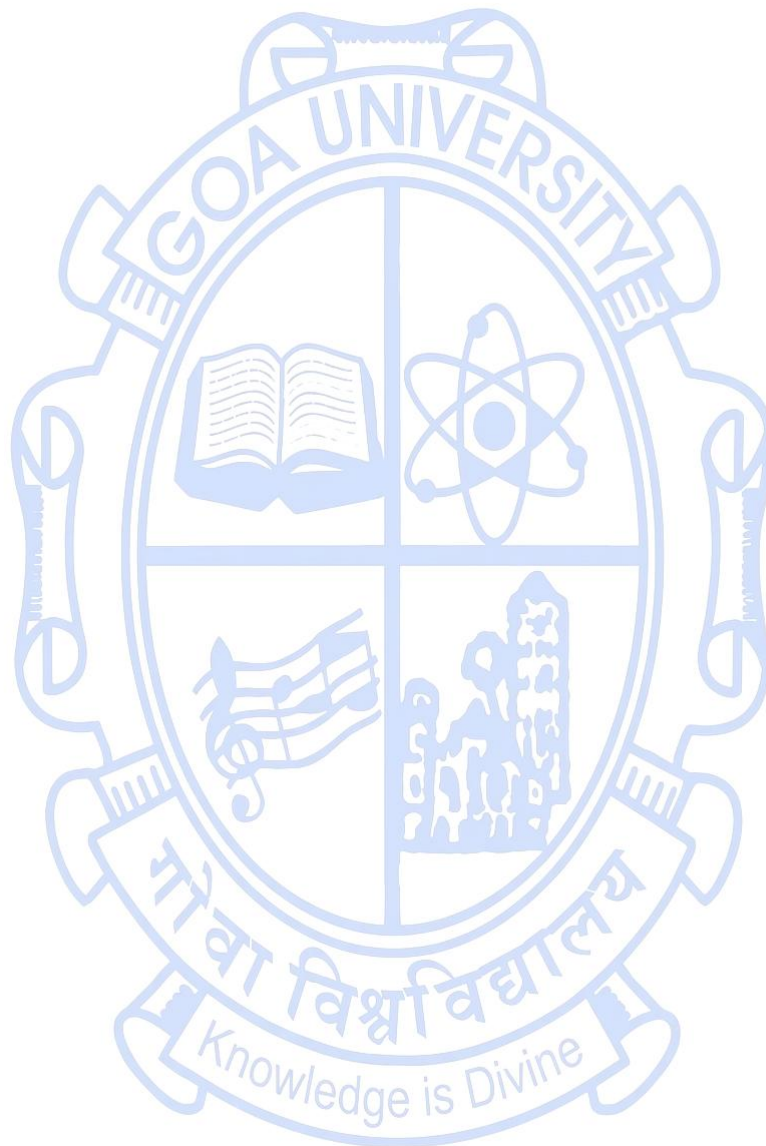
	<p><b>Practicals</b></p> <ol style="list-style-type: none"> <li>1. Nutritional assessment and screening of critically ill patients using standard screening tools.</li> <li>2. Planning and preparation of enteral and therapeutic diets for critically ill patients.</li> <li>3. Calculation of nutrient requirements and formulation of nutritional care plans for specific critical illnesses.</li> <li>4. Study of commercial enteral and parenteral nutrition formulas and their composition.</li> <li>5. Demonstration of enteral feeding techniques and care of feeding tubes.</li> <li>6. Preparation of blenderized/home-based enteral feeds and evaluation of their nutrient composition.</li> <li>7. Case study presentations on nutritional management in critical illnesses such as burns, sepsis, renal failure, cancer, and trauma.</li> <li>8. Visit to critical care units/hospitals to observe nutritional support practices.</li> <li>9. Visit to industries manufacturing nutritional supplements and clinical nutrition products for critical care.</li> <li>10. Preparation of reports on ethical issues and recent advances in critical care nutrition.</li> </ol>	<b>30</b>
<b>Pedagogy</b>	Regular lectures, Field visits, Group discussions, ICT-enabled learning experiences,	
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Kinney, J. M., &amp; Borum, P. R. (Eds.). (1989). <i>Perspectives in clinical nutrition</i>. Urban &amp; Schwarzenberg.</li> <li>2. Mahan, L. K., Raymond, J. L., &amp; Escott-Stump, S. (2020). <i>Krause's food &amp; the nutrition care process</i> (15th ed.). Elsevier.</li> <li>3. Mueller, C. M. (Ed.). (2022). <i>The ASPEN adult nutrition support core curriculum</i> (3rd ed.). American Society for Parenteral and Enteral Nutrition.</li> <li>4. Phillips, G. D., &amp; Lodgers, C. L. (1986). <i>Parenteral and enteral nutrition: A practical guide</i>. Churchill Livingstone.</li> <li>5. Shike, M., Ross, A. C., Caballero, B., &amp; Cousins, R. J. (Eds.). (2020). <i>Modern nutrition in health and disease</i> (11th ed.). Wolters Kluwer.</li> <li>6. Shikora, S. A., &amp; Blackburn, G. L. (Eds.). (1999). <i>Nutritional support: Theory and therapeutics</i>. Chapman &amp; Hall/ITP.</li> <li>7. Singer, P., &amp; Berger, M. M. (Eds.). (2019). <i>ESPEN guideline on clinical nutrition in the intensive care unit</i>. ESPEN.</li> <li>8. Waitzberg, D. L. (Ed.). (2015). <i>Nutrition in the intensive care unit: Beyond physiology</i>. Karger.</li> <li>9. Wischmeyer, P. E. (2021). <i>Nutrition in critical care</i>. Springer.</li> </ol>	
<b>Outcome</b>	<p>Student will be able to :</p> <ol style="list-style-type: none"> <li>1. <b>Apply appropriate methods for nutritional screening and assessment</b> of critically ill patients using standard clinical tools and indicators.</li> <li>2. <b>Explain the principles and components of nutritional support systems</b> in critical care settings.</li> <li>3. <b>Demonstrate knowledge of enteral nutrition</b>, including indications, formulations, administration techniques, and associated complications.</li> <li>4. <b>Describe the significance, composition, and clinical application of Total Parenteral Nutrition (TPN)</b> in critically ill patients.</li> <li>5. <b>Evaluate and monitor nutritional therapy</b> in various critical illnesses, ensuring appropriate modifications based on patient response and clinical outcomes.</li> </ol>	

**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSF-407  
**Title of the Course** : Financial Management and Entrepreneurship In Food Service  
**Number of Credits** : (3T+1P)  
**Effective from AY** : 2026-27

<b>Pre-requisites for the Course:</b>	TY BSc Home Science with Food, Nutrition and Dietetics specialization	
<b>Course Objectives:</b>	1. Initiate entrepreneurial motive and impart skills and capabilities for entrepreneurship 2. Comprehend nuances of entrepreneurship 3. Gain knowledge on Governmental plans and programs 4. Ignite / kindle aspirations to become entrepreneurs and successful managers	
<b>Content:</b>		<b>No of Hours</b>
	<b>Unit I: Fundamentals of Entrepreneurship</b> Concept, meaning, definition, scope, and significance of entrepreneurship; characteristics, qualities, functions, and types of entrepreneurs; entrepreneurship competencies and entrepreneurial motivation. Enterprise: meaning, nature, classification, and forms of business organization including sole proprietorship, partnership, and joint stock company. Role of entrepreneurship in economic and social development. Emerging trends in entrepreneurship: women entrepreneurship, social entrepreneurship, green entrepreneurship, digital entrepreneurship, and start-ups. Leadership, innovation, decision-making, communication, and managerial skills in entrepreneurship.	<b>10</b>
	<b>Unit II: Establishment and Management of Small Enterprises</b> Concept and classification of small-scale enterprises; identification and selection of products/services; entrepreneurship opportunities in food, nutrition, health, wellness, textiles, and allied sectors. Infrastructure requirements for enterprise establishment including plant location, land, building, water, and power. The 6Ms of enterprise management: man power, method, machine, material, marketing, and mother nature. Business planning, branding, packaging, digital marketing, e-commerce, consumer behaviour, and sustainable business practices.	<b>10</b>
	<b>Unit III: Institutional and Financial Support for Entrepreneurship</b> Role and functions of institutional support systems for entrepreneurship development. Commercial banks and financial institutions: SSIB, NSIC, SIDO, KVIC, NIESBUD, NABARD, SIDBI, ICICI, SFC, SSIDC, SISI, and DIC. Government schemes and initiatives for entrepreneurs including MSME schemes, Mudra Yojana, Start-up India, Stand-up India, and incubation centres. Sources of business finance, venture capital, microfinance, and entrepreneurial support services. Basics of business laws, licensing, Intellectual Property Rights (IPR), patents, trademarks, and entrepreneurial ethics.	<b>10</b>
	<b>Unit IV: Project Formulation and Enterprise Planning</b> Meaning, definition, and classification of projects; project formulation techniques including quantifiable and non-quantifiable projects, sectoral projects, and techno-economic projects. Project report preparation and project appraisal involving market feasibility, technical feasibility, financial feasibility, and economic feasibility. SWOT analysis, business model canvas, risk assessment, budgeting, break-even analysis, pricing, and project financing. Preparation and presentation of business plans and entrepreneurial proposals.	<b>10</b>
<b>Unit V: Accounting and Financial Management for Small Enterprises</b> Meaning, need, objectives, and principles of accounting. Process of accounting and bookkeeping including journal, ledger, cash book, trial balance, balance sheet, and final accounts. Fundamentals of cost accounting and financial management for small enterprises. Auditing: meaning, nature, objectives, and types. Basics of taxation, GST,	<b>5</b>	

	<p>digital payment systems, online accounting tools, and financial record management for entrepreneurs.</p> <p>Practical</p> <ol style="list-style-type: none"> <li>1. Self-assessment of entrepreneurial competencies, leadership qualities, and managerial skills. (Entrepreneurial competency checklist, SWOT self-analysis, Leadership inventory scales, Reflection sheet or portfolio documentation)</li> <li>2. Preparation and presentation of case studies of successful entrepreneurs and start-ups in food, nutrition, health, wellness, textiles, or allied sectors.</li> <li>3. Identification and selection of feasible business opportunities/products through field surveys and market analysis.</li> <li>4. Conducting market surveys to assess consumer behaviour, market demand, pricing, and competition for selected products/services.</li> <li>5. Study of infrastructure requirements and analysis of the 6Ms (man power, method, machine, material, marketing, and mother nature) for enterprise establishment.</li> <li>6. Visits to industries, incubation centres, banks, MSME support centres, KVIC, NABARD, DIC, or other entrepreneurial support institutions and preparation of field reports.</li> <li>7. Preparation of branding, packaging, promotional materials, and digital marketing plans for selected enterprises/products.</li> <li>8. Development of a business plan/model project proposal including SWOT analysis, feasibility assessment, budgeting, pricing, and break-even analysis.</li> <li>9. Preparation and maintenance of accounting records including journal, ledger, cash book, balance sheet, and final accounts using manual or digital methods.</li> <li>10. Preparation and presentation of an innovative start-up proposal or entrepreneurial venture plan related to food, nutrition, health, wellness, or community-based services.</li> </ol>	<b>30</b>
<b>Pedagogy</b>	Regular lectures, Field visits, Group discussions, ICT-enabled learning experiences, videos	
<b>References/ Readings:</b>	<p>References</p> <ol style="list-style-type: none"> <li>1. Anilkumar, S. Poornima S.C. Mini K. Abraham and Jayashree, K. (2012). Entrepreneurship Development. New Delhi: New Age International Pvt. Ltd., Publishers</li> <li>2. Badi, R. V. and Badi N. V. (2011), Entrepreneurship. New Delhi: Vrinda Publications Pvt. Limited</li> <li>3. Gordon, E., and Natarajan, K. (2013), Entrepreneurship Development. Mumbai: Himalaya Publishing House</li> <li>4. Gordon, E., and Natarajan, K. (2013), Entrepreneurship Development. Mumbai: Himalaya Publishing House LOCF: HOME SCIENCE 218</li> <li>5. Jayashree Suresh. (2016). Entrepreneurial Development. Chennai: Margham Publication</li> <li>6. Khanka, S.S. (2006). Entrepreneurial Development. New Delhi: S. Chand and Company Limited</li> <li>7. Radha, V. (2015). Entrepreneurial Development. Chennai: Prasanna Publishers and Distributors</li> <li>8. Robert, N.A. Hawkins, F. Kernelt, A. (2009). Accounting. New Delhi: Tata Me Graw – Hill Publishing Company Limited</li> <li>9. Sundara Pandian, P. (2002). Entrepreneurship Development. Virudhunagar: M.M. Publishers</li> </ol>	
<b>Outcome</b>	<ol style="list-style-type: none"> <li>1. Explain the concepts, principles, competencies, and significance of entrepreneurship and its role in economic and social development.</li> <li>2. Identify entrepreneurial opportunities and apply managerial, leadership, and marketing skills for the establishment and management of small enterprises.</li> <li>3. Examine institutional, financial, legal, and government support systems available for entrepreneurs and start-up ventures.</li> </ol>	

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|  | <ol style="list-style-type: none"><li>4. Develop and evaluate business plans and project proposals using feasibility analysis, SWOT analysis, budgeting, pricing, and risk assessment techniques.</li><li>5. Apply basic accounting, financial management, taxation, and record-keeping practices for effective management of entrepreneurial ventures.</li></ol> |
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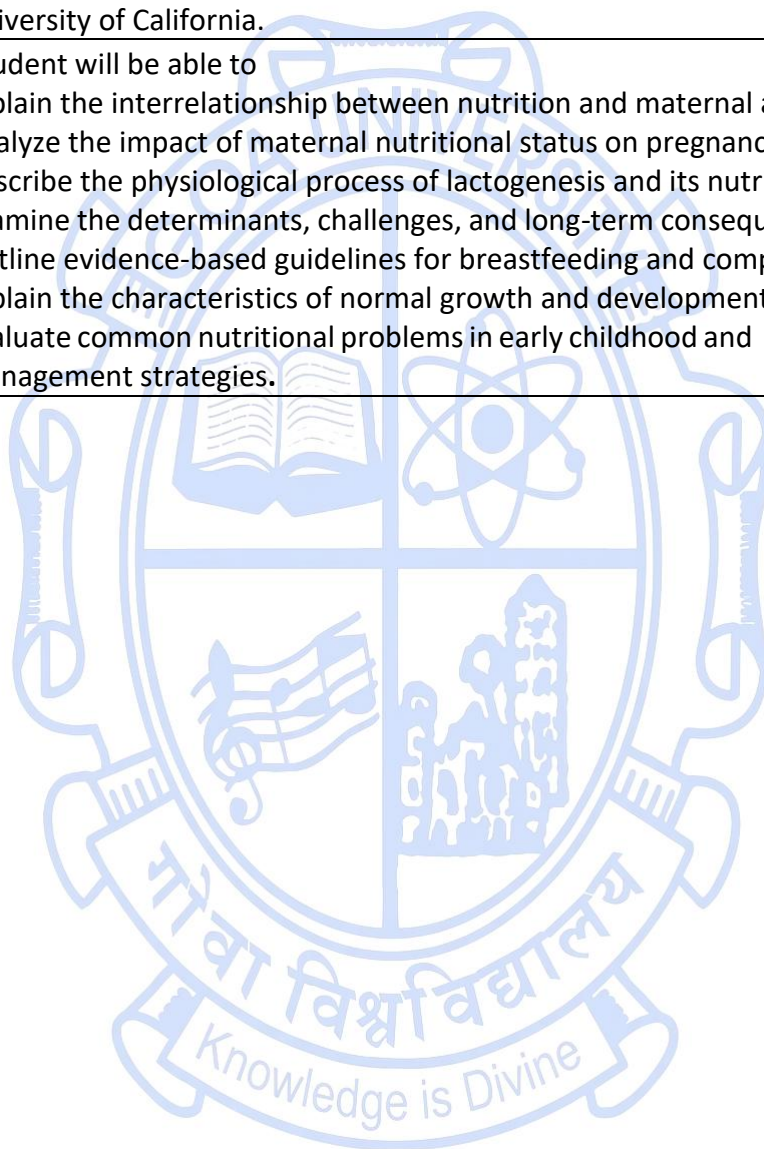


**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSF-413  
**Title of the Course** : Maternal and Child Nutrition  
**Number of Credits** : 3T+1P  
**Effective from AY** : 2026-27

<b>Pre-requisites for the Course:</b>	TY BSc Home Science with Food, Nutrition and Dietetics specialization	
<b>Course Objectives:</b>	<ul style="list-style-type: none"> <li>To Comprehend the physiological changes during pregnancy and lactation and the importance of nutrition during these stages.</li> <li>Understand the growth pattern and role of nutrition through infancy and childhood years.</li> <li>Learn about the common health concerns during childhood and their management.</li> <li>Understand the infant and young child feeding practices.</li> </ul>	
<b>Content:</b>		<b>No of Hours</b>
	<b>Unit I Nutrition during Adolescence and the First 1000 Days</b> Intergenerational cycle of malnutrition Growth and development in adolescent girls. Nutrition during Pre-conceptual and Periconceptual Concept of first 1000 days; Barker's Hypothesis Importance of Nutrition during first 1000 days.	<b>5</b>
	<b>Unit II: Maternal Nutrition during Pregnancy and Lactation</b> Maternal physiology and metabolism during pregnancy with emphasis on anatomical, physiological, hormonal, and metabolic adaptations. Determinants of pregnancy outcomes including maternal age, nutritional status, socioeconomic and environmental factors, lifestyle, infections, and maternal health conditions. High-risk pregnancy and its nutritional implications. Evidence-based nutritional requirements and dietary management during different stages of pregnancy. Fetal growth and development: structural and functional differentiation during the prenatal period; placental function; fetal programming; metabolism, transport, and utilization of nutrients during fetal development. Relationship between maternal nutrition and fetal growth, birth outcomes, and long-term health consequences. Physiology and biochemistry of lactation including hormonal regulation, composition of breast milk, and factors influencing lactation performance. Nutritional requirements during lactation and dietary management of lactating mothers. Lactation counselling and management strategies for successful breastfeeding. Clinical and public health aspects of maternal nutrition including nutritional anaemia, HIV infection, pregnancy-induced hypertension, gestational complications, maternal morbidity and mortality, and the relationship between maternal diet, nutritional status, and pregnancy outcomes. Maternal health policies, programmes, and current issues related to maternal and child health.	<b>15</b>
	<b>Unit III: Infant Nutrition and Early Childhood Growth</b> Principles and determinants of early postnatal growth and development during the first two years of life. Growth assessment, growth monitoring, and growth promotion using standard growth references and indicators. Nutritional, biochemical, and environmental factors influencing infant growth and development. Infant and young child feeding (IYCF) practices with special emphasis on exclusive breastfeeding, complementary feeding, responsive feeding, and feeding guidelines for at-risk and vulnerable infants including low birth weight, preterm, and medically compromised infants. Nutritional and immunological significance of breastfeeding; human milk composition; feeding transitions during infancy; dietary diversification; prevention and management of growth faltering and undernutrition during infancy and early childhood.	<b>7</b>

	<p><b>UNIT IV</b></p> <p>Growth, development, and nutritional requirements during preschool and school years with emphasis on physical, cognitive, behavioural, and psychosocial development. Assessment of nutritional status and dietary adequacy in children. Epidemiology, aetiology, pathophysiology, clinical manifestations, prevention, dietary management, and long-term implications of common nutritional disorders in childhood including undernutrition (PEM, underweight, stunting, wasting, severe acute malnutrition), overnutrition and childhood obesity, nutritional anaemia, diarrhoea, and constipation.</p> <p>Advanced nutritional management for children with special health care needs including inborn errors of metabolism, malabsorption syndromes such as lactose intolerance and celiac disease, neurological and developmental disorders including epilepsy, cerebral palsy, ADHD, and physical disabilities.</p> <p>Child health indicators and morbidity patterns; neonatal, infant, and child mortality; IMR and U5MR; relationship between malnutrition, infection, and mortality; food insecurity and the concept of zero hunger/zero food crisis; national and global strategies for improving child health and nutrition.</p> <p>Overview of maternal and child nutrition policies and programmes</p>	<b>18</b>
	<p><b>Practical</b></p> <ol style="list-style-type: none"> <li>1. <b>Assessment of Nutritional Status of Adolescent Girls</b> Anthropometric measurements: height, weight, BMI, MUAC Interpretation using WHO growth charts</li> <li>2. <b>Dietary Assessment during Pre-conception and Pregnancy</b> 24-hour dietary recall and nutrient adequacy evaluation for pregnant women</li> <li>3. <b>Preparation of Nutrition Education Material on First 1000 Days</b> Posters, pamphlets, flip charts, or IEC material for mothers</li> <li>4. <b>Study of Physiological Changes during Pregnancy and Lactation</b> Case-based discussion and identification of nutritional implications</li> <li>5. <b>Planning Balanced Diets for Pregnant and Lactating Women</b> Meal planning according to trimester and lactation stage requirements</li> <li>6. <b>Growth Monitoring of Infants and Young Children</b> Plotting weight and height on WHO growth charts and interpretation</li> <li>7. <b>Demonstration of Complementary Feeding and Weaning Foods</b> Preparation of low-cost nutritious complementary foods for infants</li> <li>8. <b>Case Study on Common Nutritional Disorders in Children</b> PEM, anaemia, childhood obesity, diarrhoea, or constipation</li> <li>9. <b>Diet Planning for Children with Special Needs</b> Meal modification for lactose intolerance, celiac disease, ADHD, epilepsy, or cerebral palsy</li> <li>10. <b>Field Visit/Survey of Maternal and Child Nutrition Programmes</b> Study of ICDS, Poshan Abhiyaan, Mid-Day Meal Scheme, or Anganwadi services and report writing</li> </ol>	<b>30</b>
<b>Pedagogy</b>	Lectures and interactive discussions, Case-based learning and group discussions, Practical demonstrations Field visits and use of ICT and audio-visual aids	
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Bhatia, J., Bhutta, Z. A., &amp; Kalhan, S. C. (2012). <i>Maternal and child nutrition: The first 1000 days</i>. Nestlé Nutrition Institute Workshop Series (Vol. 74).</li> <li>2. Kail, R. V., &amp; Cavanaugh, J. C. (2010). <i>Human development: A lifespan view</i> (5th ed.). Cengage Learning.</li> <li>3. Klein, M., &amp; Delaney, T. (1998). <i>Feeding and nutrition for the child with special needs</i>. Therapy Skill Builders.</li> <li>4. Morgan, J. B., &amp; Dickerson, J. W. T. (2003). <i>Nutrition in early life</i>. Wiley.</li> <li>5. Rickert, V. I. (1996). <i>Adolescent nutrition: Assessment and management</i>. Chapman &amp; Hall.</li> </ol>	

	<ol style="list-style-type: none"> <li>6. Slattery, J. (1979). <i>Maternal and child nutrition: Assessment and counselling</i>. Appleton-Century-Crofts.</li> <li>7. Vir, S. (2011). <i>Public health nutrition in developing countries</i>. Woodhead Publishing.</li> <li>8. Waugh, A., &amp; Grant, A. (2010). <i>Ross &amp; Wilson anatomy and physiology in health and illness</i> (11th ed.). Churchill Livingstone.</li> <li>9. World Health Organization. (2006). <i>WHO child growth standards</i>. <a href="https://www.who.int/childgrowth/en">https://www.who.int/childgrowth/en</a></li> <li>10. World Health Organization. (2013). <i>Infant and young child feeding (IYCF) guidelines</i>. <a href="https://wcd.nic.in/sites/default/files/nationalguidelines.pdf">https://wcd.nic.in/sites/default/files/nationalguidelines.pdf</a></li> <li>11. Hannah, N., &amp; Sheiman, D. (1986). <i>Infancy: A guide to research and resources</i>. Garland Publishers.</li> <li>12. Sarah, H. (1981). <i>Maternal, infant and child nutrition</i>. Health Sciences Consortium, University of California.</li> </ol>
<b>Outcome</b>	<p>The student will be able to</p> <ol style="list-style-type: none"> <li>1. Explain the interrelationship between nutrition and maternal and child health.</li> <li>2. Analyze the impact of maternal nutritional status on pregnancy outcomes.</li> <li>3. Describe the physiological process of lactogenesis and its nutritional regulation.</li> <li>4. Examine the determinants, challenges, and long-term consequences of low birth weight.</li> <li>5. Outline evidence-based guidelines for breastfeeding and complementary feeding.</li> <li>6. Explain the characteristics of normal growth and development in children.</li> <li>7. Evaluate common nutritional problems in early childhood and recommend appropriate management strategies.</li> </ol>



## SPECIALIZATION 2. TEXTILES AND FASHION STUDIES

### SEMESTER III

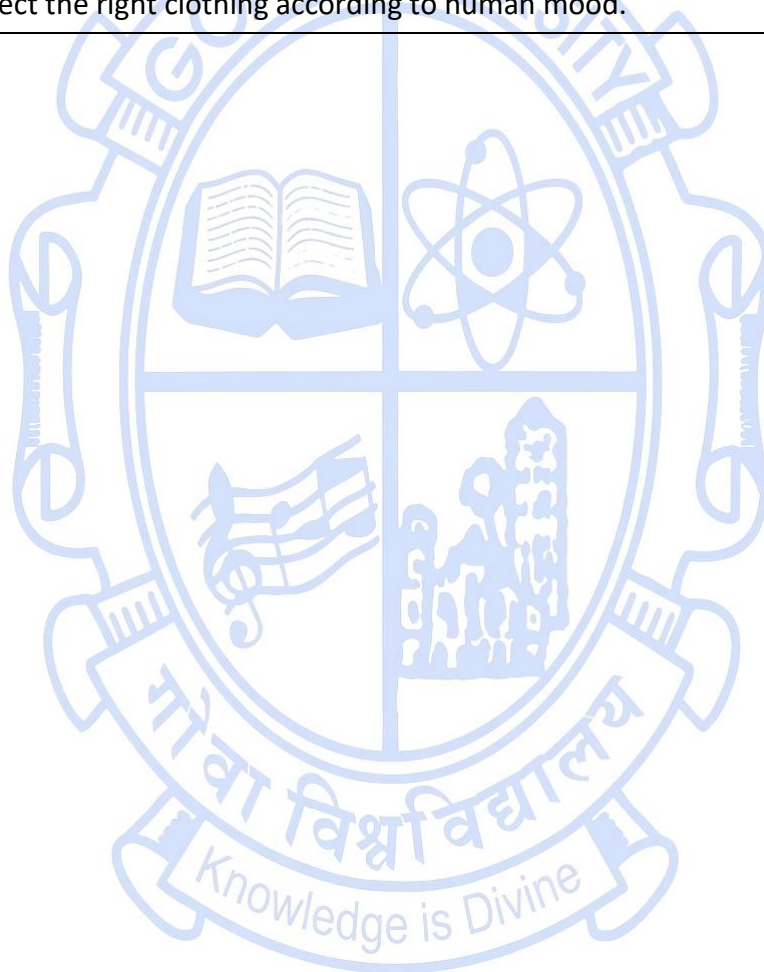
**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HST-200  
**Title of the Course** : Pattern Making and Styling for Kids wear  
**Number of Credits** : 4P  
**Effective from AY** : 2024-25

<b>Pre-requisites for the Course:</b>	HSC-141 Fundamentals of Clothing Construction	
<b>Course Objectives:</b>	<ol style="list-style-type: none"> <li>To enable the students to develop skills in pattern making for kid's garments (upto 10 years old boys and girls)</li> <li>To learn to adapt different patterns</li> <li>To create patterns for formal occasion</li> </ol>	
<b>Content:</b>	<b>PRACTICALS (120 hrs)</b>	<b>No of Hours</b>
	• Making patterns for following garments: Both for Boys and Girls	10
	• Different types of shirts	10
	• Different types of pants	10
	• Skirts and Tops	10
	• Dress- one piece / two piece	10
	• Dresses - Casual	10
	• Garments for Festival/Feast	10
	• Garments for Weddings (Indian, Western and other cultures)	20
	• School uniforms: Different weather conditions	10
	• Sports wear	10
	• Night wear	10
• Accessories	10	
<b>Pedagogy</b>	<ul style="list-style-type: none"> <li>Regular lectures, Group discussion,</li> <li>ICT enabled learning experiences</li> </ul>	
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>Connie Amadon Crawford, (1992)' A guide to Fashion Sewing' Fairchild Publishers, USA.</li> <li>Doonga Ji Sherie and Deshpande, R,(1999)'Basic Process and Clothing Construction.</li> <li>Dorothy Wood,( 1997) "Creative Sewing, the practical Encyclopaedia of Sewing". Mc Graw - Hill Book Co. Inc, New York.</li> <li>Selvia Rosen, ( 1995)'Children's Clothing: Designing, Selecting Fabrics, Pattern Making &amp; Sewing, B T Batsford Ltd, London</li> <li>Thomes Anna Jacob, (1999) 'The Art of sewing,' UBS, Publishers distribution Ltd. New Delhi.</li> </ol>	
<b>Course Outcome</b>	<ol style="list-style-type: none"> <li>Students will be able to:                     <ol style="list-style-type: none"> <li>Apply the principles and elements of design in textiles and fashion design for kids garment.</li> <li>Design pattern for kids garments</li> <li>Design patterns for garments for various occasions</li> <li>Will be able design school uniforms for different weather conditions.</li> <li>Identify gender specific accessories for kids garments</li> </ol> </li> </ol>	

**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HST-201  
**Title of the Course** : Psychology of Fashion  
**Number of Credits** : 2T+2P  
**Effective from AY** : 2024-25

<b>Pre-requisites for the Course:</b>	HSC-112 Fibre to Fabric	
<b>Course Objectives:</b>	To understand the effect of psychological factors on clothing 1. To understand the importance of psychology in fashion 2. To identify the dress according to season 3. To interpret the influence of fashion on human body 4. To understand the demographic trends of clothing 5. Gain knowledge on Psychographic trends of clothing	
<b>Content:</b>		<b>No. of Hours</b>
<b>Unit:1</b>	<b>Psychology and fashion</b> Overview of fashion psychology, psychology behind fashion and clothing – variations and combinations, correct and wrong outfit, feel and comfort, positive and negative changes, Style affects- personal style and appearance	<b>5</b>
<b>Unit:2</b>	<b>Psychology of color in clothing</b> Psychological view of color categories, warm and cool colors, characteristics and effects of color, color blindness, metamerism, color and impression, color perceptions, mood and emotions, color and desire, harmony of colors, color combinations	<b>5</b>
<b>Unit:3</b>	<b>Psychological perspectives on cloths</b> cloths and social cognition, cloths and impression, cloths and physical appearance, cloths and body image, body modifications, dress and personality, dress and self, psychology of clothing – factors influencing fashion, effects of dress on the behaviour of the wearer.	<b>5</b>
<b>Unit:4</b>	<b>Psychological aspects of fashion</b> Understanding the purpose of clothing - Protection, modesty, concealment, attraction. Social and psychological aspects of fashion; selection of material, color, clothing according to human; understanding the theories of fashion, effect of fashion life cycle and length of fashion	<b>5</b>
<b>Unit:5</b>	<b>Flow of fashion and psychology</b> Fashion cycle, changes in fashion and adaptability, reinterpretation, trend setting, structure, wellbeing in fashion industry, influence of fashion on body, fashion consumption and behaviour, fashion and self-identity, fashion as status symbol, career in fashion and fashion forward	<b>5</b>
<b>Unit:6</b>	<b>Buying behaviour and Psychology</b> Consumer psychology and buying behaviour: Mind to wear, get right clothing, occasional clothing, self-confidence with dressing, Reason to dress the way- psychological process, fashion psychology today.	<b>5</b>
	<b>PRACTICAL</b> Maintaining a portfolio for all the units of theory conduct a survey and submit a report to understand the consumer preference with respect to psychology of fashion	<b>60</b>
<b>Pedagogy</b>	Regular lectures, Group discussion, ICT enabled learning experiences.	

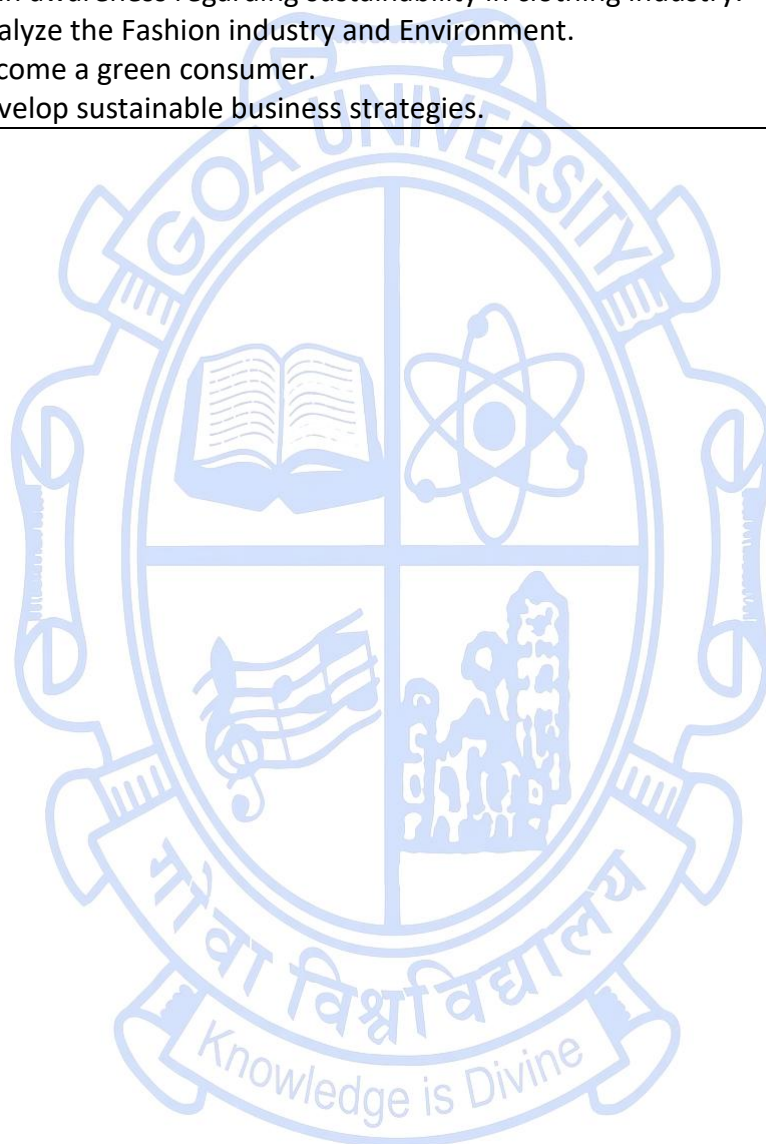
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Carolyn Mair, (2018 )The Psychology of Fashion (The Psychology of Everything), Routledge; 1 edition,</li> <li>2. Mike Easey, 2011. Fashion Marketing, Wiley- Blackwell Publishing,</li> <li>3. Professor Karen J. Pine (2014), Mind What You Wear: The Psychology of Fashion, Kindle edition,</li> <li>4. Sharron J. Lennon, Kim K. P. Johnson, Nancy (2017) A. Rudd, Social Psychology of Dress, Fairchild Books,</li> <li>5. Solomon M.R, Rabolt.N.J(2003) – Consumer Behaviour in Fashion – Pearson Education Publishing – Noida S</li> <li>6. Usha Kulshrestha, Radhakashyap (2007)-Clothing Behaviour-Psychological analysis – Pointer Publisher-Jaipur.</li> </ol>
<b>Course Outcome</b>	<p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Comprehend the importance and function of clothes.</li> <li>2. Gain an insight of various trends of clothing.</li> <li>3. Identify the clothing behaviour.</li> <li>4. Gain knowledge on the impact of color with mood and perceptions</li> <li>5. Select the right clothing according to human mood.</li> </ol>



**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HST-211  
**Title of the Course** : Eco and Sustainable Fashion  
**Number of Credits** : 2T+2P  
**Effective from AY** : 2024-25

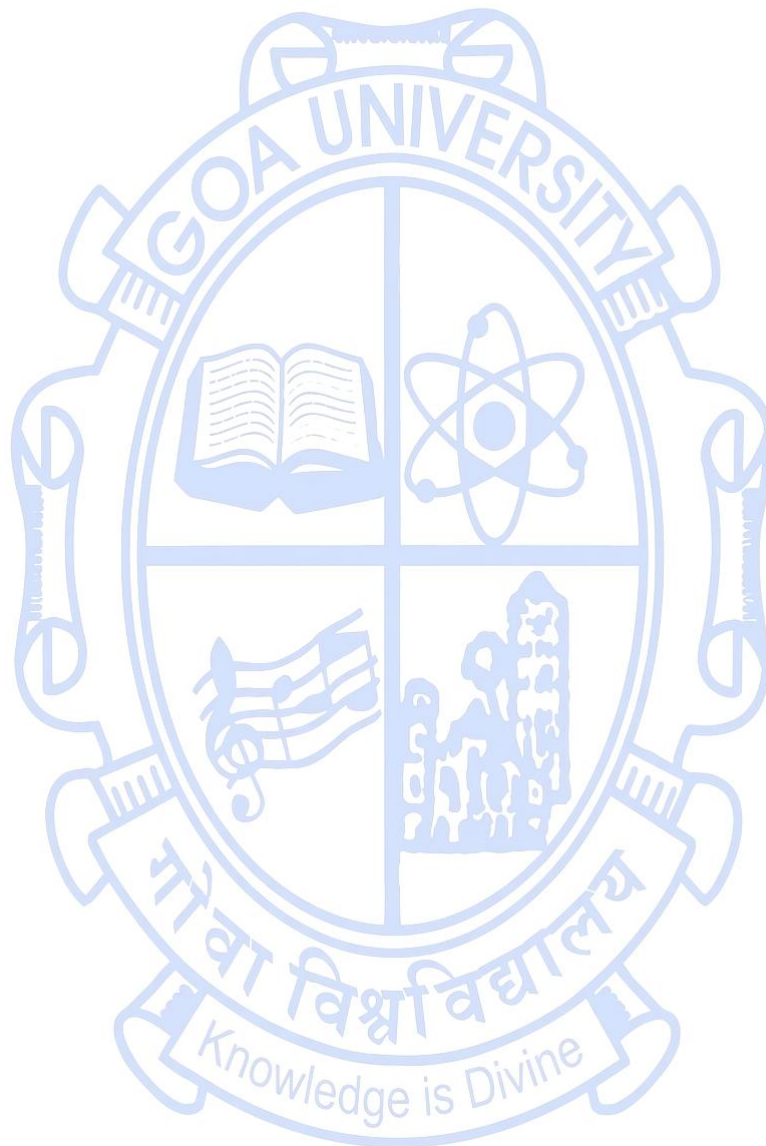
<b>Pre-requisites for the Course:</b>	FYBSc Home Science	
<b>Course Objectives:</b>	1. To Understand the concept of fashion industry and its sustainability 2. To learn about the concept of sustainability in clothing industry 3. To learn about relations of Fashion industry and Environment 4. To Understand the idea of green consumerism 5. To understand about Sustainable Business Strategies	
<b>Content:</b>		<b>No. of Hours</b>
<b>Unit I</b>	<b>An overview of Eco and Sustainable Development</b> Introduction and needs for eco-textiles, importance of eco-textiles. Ecology - Production ecology, Human ecology and Disposal ecology. Structure and stability of the ecosystem. Introduction, Definition, concepts of Sustainable Development, SDG Goals, Principles of sustainability. Green manufacturing- introduction and importance. Waste management for sustainable textiles and clothing.	<b>4</b>
<b>Unit II</b>	<b>Fashion sustainability</b> Introduction- Fashion, Sustainability, Pillars of sustainability. Sustainable fashion- Meaning-Importance-Need- Social, Economic and Environmental concerns related to fashion -Business models for sustainable fashion-Sustainable clothing- Sustainable consumption practices for enhanced product life. Sustainability in fashion-Benefits and challenges. Fashions environmental impact - Water pollution, water consumption, Micro fiber pollution, Waste and disposal, chemical usage, carbon emissions, soil degradation. Reducing environmental impact in fashion industry	<b>7</b>
<b>Unit-III</b>	<b>Sustainability in Clothing Industry</b> Recycling and upcycling- Concepts and benefits-,Sustainability in Clothing Industry - Clothing lifecycle, fast and slow fashion, clothes repair and re-use. Value and Green aesthetics- sustainability through innovative designs and accessories. Circular economy- Green Consumerism -Meaning-Importance- green consumerism and waste reduction- Green consumer – Possible ways to become green consumer- Green Marketing Strategies. 3Rs – Reduce, Reuse and Recycle. Ways to increase the sustainability of fashion -Raise awareness, Radical Rethinking, Increase corporate and consumer responsibility. Value and Green aesthetics- Ethical design- Concept of Zero waste fashion design-Product service system (PSS) for sustainable fashion	<b>8</b>
<b>Unit-IV</b>	<b>Organic and Sustainable Textiles</b> Organic fiber production and Processes; Organic cotton, wool, silk, bamboo, Regenerated fibers- Lyocell, PLA (Polylactic Acid) fibers, Recycled fibers- PET. Nano technology applications in textile industry. Sustainable fibers– Introduction, importance and applications. Zero liquid discharge in textile industry. Reduction of carbon footprints in textile processing and finishing;	<b>7</b>
<b>Unit-V</b>	<b>Eco-friendly Processing of Textiles</b> Modern approaches to eco- friendly wet processing of woven and knitted clothing. Ecofriendly dyes and their method of dyeing; Energy efficient production methods and processing techniques. Enzymes, and natural dyes, Natural mordants for natural colour dye fixation.	<b>4</b>

	<b>PRACTICAL</b> Maintaining a portfolio for all the units of theory Latest innovation in sustainable fashion – a report	<b>60</b>
<b>Pedagogy</b>	<ul style="list-style-type: none"> <li>Regular lectures, Group discussion,</li> <li>ICT enabled learning experiences, Field visits</li> </ul>	
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>Fletcher K, 2008 Sustainable Fashion and Textiles- A Design Journey, Lawrence King Publishing.</li> <li>Yamase K, 2012 Cut up Couture- Edgy Upcycled Garments to Sew, Interweave.</li> <li>Phillips J, Create 2013, Sustainable Luxe- A Guide to Feel Good Fashion, Space Publishing.</li> </ol>	
<b>Outcome</b>	<p>Students will be able to:</p> <ol style="list-style-type: none"> <li>Gain insight into sustainability of fashion industry.</li> <li>Gain awareness regarding sustainability in clothing industry.</li> <li>Analyze the Fashion industry and Environment.</li> <li>Become a green consumer.</li> <li>Develop sustainable business strategies.</li> </ol>	



**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSC-232  
**Title of the Course** : Fashion Crafts/Accessories  
**Number of Credits** : 3P  
**Effective from AY** : 2024-25

<b>Pre-requisites for the Course:</b>	FY B.Sc. Home Science	
<b>Course Objectives:</b>	1. To enable the students to understand the history and importance of accessories 2. To impart knowledge on research, designing and manufacturing process 3. To provide clear insights on various types of accessories and selection of materials	
<b>Content:</b>		<b>No of Hours</b>
<b>Unit I:</b>	<b>PRACTICAL</b> <b>Role and Significance of Fashion Accessories</b> <ul style="list-style-type: none"> <li>• Importance of fashion accessories in apparel industry</li> <li>• History and overview of accessory design</li> <li>• Role of an accessory designer</li> <li>• Leading contemporary accessory designers and brands</li> </ul> <b>Unit II: Understanding categories, styles and production methods of fashion Accessories</b> <ul style="list-style-type: none"> <li>• Brief history, common styles, components, materials used and production methods of select accessories</li> </ul>	<b>20</b>
<b>Unit II</b>	<b>Using Illustration, colouring and rendering techniques for designing fashion accessories</b> <ul style="list-style-type: none"> <li>• Designing and construction of - Handbags, - Footwear – Hats,</li> <li>• Common styles and production methods of other accessories – Jewellery, Belts, Gloves, Scarves,</li> <li>• Coordinating accessories and outfits</li> </ul>	<b>30</b>
<b>Unit III:</b>	<b>From Concept to Creation</b> <ul style="list-style-type: none"> <li>• Key Steps in Accessories Design, Creative Design Development of accessories,</li> <li>• Inspiration and Research, - Trend forecasting of fashion accessories - Design development - Developing a range, Presentation techniques, Restyling project - Restyling of plain accessories using creative techniques</li> </ul>	<b>20</b>
	<ul style="list-style-type: none"> <li>• Final Project – Based on an inspiration, the students are required to design a collection of accessories, Final Portfolio and Presentation.</li> </ul>	<b>20</b>
<b>Pedagogy</b>	<ul style="list-style-type: none"> <li>• Regular lectures, Group discussion,</li> <li>• ICT enabled learning experiences Videos.</li> </ul>	
<b>References/ Readings:</b>	1. Genova Aneta (2011), Accessory Design, Fairchild Publications; 1 edition 2. Lau John (2012) Basics Fashion Design : Designing Accessories: Exploring the design and construction of bags, shoes, hats and jewellery, A Publishing; 1 edition 3. Schaffer Jane, Saunders Sue 2012, Fashion Design Course: Accessories: Design Practice and Processes for Creating Hats, Bags, Shoes, and Other Fashion Accessories, Barron's Educational Series 4. Solomon M.R , Rabolt.N.J(2003) – Consumer Behaviour in Fashion – Pearson Education Publishing – Noida S 5. Stephens Frings Gini, (2007) Fashion: From Concept to Consumer (9th Edition), Prentice Hall	
<b>Course Outcome</b>	Students will be able to: <ol style="list-style-type: none"> <li>1. Analyse the importance of accessories for various purpose and occasion, and add value to the products based on end application</li> <li>2. Design and develop the accessories based on trend, forecast and market analysis</li> <li>3. Select the appropriate materials for different types of accessories</li> </ol>	



**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSC-242  
**Title of the Course** : Surface Enrichment  
**Number of Credits** : 3P  
**Effective from AY** : 2024-25

<b>Pre-requisites for the Course:</b>	FY B.Sc. Home Science	
<b>Course Objectives:</b>	<ul style="list-style-type: none"> <li>To develop the skills in ornamenting fabric and garments using embroidery</li> <li>To impart knowledge on various traditional embroideries of India</li> <li>To gain familiarity in designing software and technology</li> </ul>	
<b>Content:</b>	<b>PRACTICAL</b>	<b>No. of Hours</b>
	<ul style="list-style-type: none"> <li>Fabric manipulation –cuts, removal of threads</li> </ul>	<b>10</b>
	<ul style="list-style-type: none"> <li>Surface Decoration - Embroidery, Ari work, Embellishments</li> </ul>	<b>10</b>
	<ul style="list-style-type: none"> <li>Design through color application Painting, Dyeing- Tie and dye, Batik Printing- Discharge, Resist, Block, Screen, Stencil</li> </ul>	<b>20</b>
	<ul style="list-style-type: none"> <li>Thread structure- macramé, braiding, lace making (crochet, tatting)</li> </ul>	<b>10</b>
	<ul style="list-style-type: none"> <li>Surface layering - Applique- simple, cut, felt, - Quilting- hand and machine, - Pleats and Tucks</li> </ul>	<b>20</b>
<ul style="list-style-type: none"> <li>Product development using the above design exploration techniques</li> </ul>	<b>20</b>	
<b>Pedagogy</b>	<ul style="list-style-type: none"> <li>Regular lectures, Group discussion,</li> <li>ICT enabled learning experiences.</li> </ul>	
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>Aparna Gwande ( 2017) Designs from Indian Textile, Tory Mirror Infotech Pvt Ltd</li> <li>Carne Griffiths, (2019) The Organic Painter: Learn to paint with tea, coffee, embroidery, flame, and more: Explore Unusual Materials and Playful Techniques to Expand your Creative Practice, Quarry Books,</li> <li>Joan Nicholson, (2011) “Contemporary Embroidery Design”, Read more Books publishers</li> <li>Shailaja D. Naik, “Traditional Embroideries of India”, 2010, API Publishing Corporation, New Delhi</li> </ol>	
<b>Course Outcome</b>	<p>Students will be able to:</p> <ol style="list-style-type: none"> <li>Attain knowledge on the embroidery and the painting techniques</li> <li>Interpret the different types of painting and embroidery, thread structure</li> <li>Identify the processes involved in surface layering</li> <li>Develop a new product using design exploration techniques</li> </ol>	

## Semester IV

**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HST-202  
**Title of the Course** : Apparel Design and Illustration  
**Number of Credits** : 2T+2P  
**Effective from AY** : 2024-25

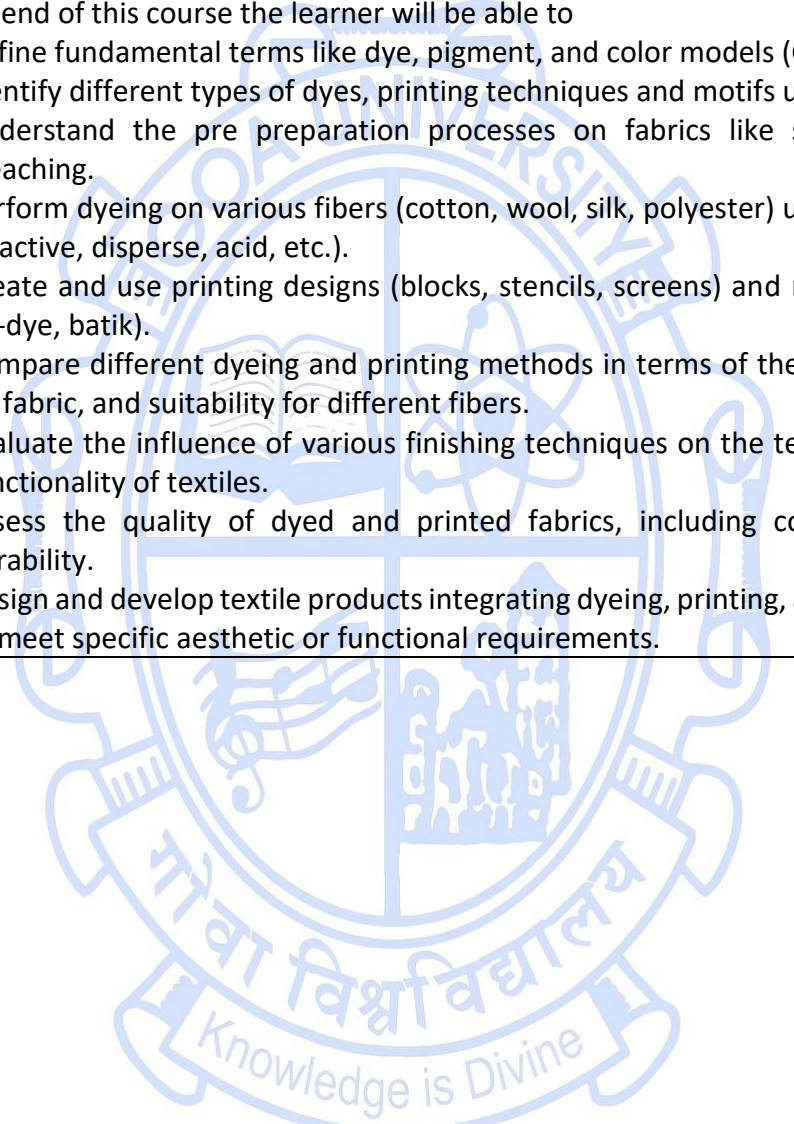
<b>Pre-requisites for the Course:</b>	HSC-141 Fundamentals of Clothing Construction	
<b>Course Objectives:</b>	<ul style="list-style-type: none"> <li>Understand the principles and elements of design.</li> <li>Apply the principles and elements of design in textiles and fashion design.</li> <li>Explore and learn sketching and drawing techniques to represent styles and fabrics in fashion.</li> <li>Learns basic traditional media methods to develop creative and customized fashion illustrations</li> <li>Design apparels and accessories for men, women and children.</li> </ul>	
<b>Content:</b>		<b>No. of Hours</b>
	<b>Unit-I. Understanding Design</b> Design-its meaning and importance Importance of good taste in design Designer – Textile designer and Fashion designer Challenges and opportunities for design and designers	<b>8</b>
	<b>Unit-II.Elements of Design and Its Co-Relation</b> Point Line Color Plane Volume Space Shape Form light Texture pattern	<b>4</b>
	<b>Unit-III. Principles of Design and Its Co-Relation</b> Balance Proportion and scale, Rhythm Emphasis Harmony Contrast Variety Law of area	<b>4</b>
	<b>Unit-IV. Line, Colour and Pattern in Design</b> Line and its expressiveness Types and composition Effect of lines to create rhythm and optical illusions Colour expression Colour wheel and its dimension Colour mixing and colour system Colour harmony and colour scheme Colour in different media Colour in fabric, texture and light Pattern Surface pattern and pattern group Repeat pattern	<b>7</b>
	<b>Unit-V. Human body proportions and illustrating fashion</b> Balance and proportion in human body: average and fashion figures Postures of male, female and children croquis and its significance: Front view, Back view, Side view and 3/4th view Stylizing the croquis and its importance Understanding fabric textures and drapes	<b>7</b>
	<b>Practical</b> 1. Introduction of flat sketches, garment features and accessories: types of silhouettes, skirts, trousers, necklines, collars, sleeves, coats and jackets, footwear, handbags. 2. Factors to be considered when designing for children, women and men- formal wear, casual wear, night wear, sportswear, ethnic wear, wedding wear 3. Drawing average and fashion figures: stick, block and flesh 4. Observation of people and live sketching in different postures 5. Converting photographic poses from magazines into fashion illustration 6. Exploring medias to create fabric textures 7. Rendering of fabric swatches and fabric drapes using different colour medias 8. Visit to fashion museum / virtual tour of a fashion museum.	<b>60</b>

	<p>9. Visiting designers' boutique / designer's website and writing report</p> <p>10. Preparation of an album of garment features for designing of Apparels.</p> <p>11. Preparation of an album of accessories suitable for different occasion.</p> <p>12. Observation of people in different situations and live sketching of styles worn</p> <p>13. Designing of apparel and accessories for men as per the given brief.</p> <p>14. Designing of apparel and accessories for women as per the given brief.</p> <p>15. Designing of apparel and accessories for children as per the given brief.</p> <p>16. Portfolio development</p>	
<b>Pedagogy</b>	Regular lectures, Group discussion,ICT enabled learning experiences .	
<b>References/ Readings:</b>	<p>1. Derrick, L. (2018) Fashion Sketchbook: Fashion Sketchbook with figure templates (Fashion Croquis), Create Space Independent Publishing Platform</p> <p>2. Elaine, S. (2013) The Dynamics of Fashion. 4th Ed. New York: Bloomsbury publication. • Julia Y.,&amp; Donna G., (2011), the Fashion Careers Guidebook: A Guide to Every Career in the Fashion Industry and How to Get It, Barron's Educational Series.</p> <p>3. Linda,T.,(2010), Portfolio Presentation for Fashion Designers, 3rd Edition, Fairchild books, New York.</p> <p>4. Mary,L.G.,(2008), The Fairchild Encyclopedia of Menswear, Fairchild Publications, New York.</p> <p>5. Michele W.B., Diane D., (2006), the Spec Manual, Fairchild Publications, New York.</p> <p>6. Patrick, J. I. (1996) Fashion Design Illustration - men, London: B.T. Batsford.</p> <p>7. Patrick, J. I. (2003) Introduction to Fashion Design, London: B.T. Batsford</p> <p>8. Patrick, J. I. (2005) Fashion Design Illustration - men, London: B.T. Batsford</p> <p>9. Patrick, J. I. (2009) New Encyclopedia of Fashion Details: Over 1000 Fashion Details, London: B.T. Batsford.</p> <p>10. Sharon L. T. and Glazer, S.S. (2017), Illustrating Fashion, 4th Ed. New York: Fairchild Books. The Snap Fashion Sketch Book, Prentice Hall, NewJersey.</p> <p>11. Stipelman, S. (2017) Illustrating Fashion, 4th Ed. New York: Fairchild Books.</p> <p>12. Tate, S. L. &amp; Glazer, B. (2007) The Snap Fashion Sketchbook, New Jersey: Prentice Hall.</p>	
<b>Course Outcomes</b>	<p>At the end of this course the learner will be able to</p> <ol style="list-style-type: none"> <li>1. Define key concepts in apparel design, including design elements, principles, and body proportions.</li> <li>2. Explain the significance of design elements, principles, and human proportions in creating functional and stylish apparel.</li> <li>3. Apply design principles, lines, colors, and patterns to create compelling fashion designs and illustrations.</li> <li>4. Apply basic traditional media methods to develop creative and customized fashion illustrations</li> <li>5. Analyze the interaction of design elements and human proportions to assess the visual and functional aspects of apparel design.</li> <li>6. Design and create visual compositions in fashion illustration.</li> </ol>	

**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HST-203  
**Title of the Course** : Dyeing, Printing and Finishing of Textiles  
**Number of Credits** : 3T+1P  
**Effective from AY** : 2024-25

<b>Pre-requisites for the Course:</b>	HSC-112 Fibre to Fabric	
<b>Course Objectives:</b>	1. Introduce basics of dyeing, printing and finishing 2. Inculcate the knowledge of auxiliaries and chemicals used for dyeing and printing 3. Enhance the understanding of the relation between the dyes, pigments and fabrics. 4. Acquaint students with the importance of finishing of textiles 5. Develop the skills in doing dyeing and printing of textiles	
<b>Content:</b>		<b>No. of Hours</b>
	<b>Unit-I.</b> Introduction • History of dyeing and printing • Terms related to colour Dye, pigment, light, hue, value, intensity • Colour wheel and schemes • Digital colour models: CMYK. RGB • Colour matching system • Directional and non-directional printing • Motifs types: Geometric, floral and novelty	<b>9</b>
	<b>Unit-II.</b> Basics of Dyeing and Printing Classification of dyes Classification of Printing Difference between dyes and pigments Pre-paration of fabrics before dyeing and printing Desizing, scouring, bleaching, mercerization, carbonization Heat setting: processing method	<b>9</b>
	<b>Unit-III.</b> Dyeing Classification of dyes, Auxiliaries and machineries used for dyeing, Methods for dyeing, Factors affecting dyeing, Dyeing of cotton, wool and silk, Dyeing of viscose and polyester, Natural dyeing methods and limitations, After treatments	<b>9</b>
	<b>Unit-IV.</b> Printing Preparation of print paste and printing table, Pigments and dyes used, Direct style of printing, Resist style of printing, Discharge style of printing, Novel techniques of printing, Fixation and after treatment processes, Dyes for digital textile printing	<b>9</b>
	<b>Unit-V.</b> Finishes Classification: Physical, Chemical and Functional Objectives of textile finishing Factors affecting the finishing of textiles: fibre, weave, physical properties, end use, susceptibility to chemical modification Finishes for achieving different texture Finishes for enhancing specific characteristics	<b>9</b>
	<b>Practical</b> 1. Preparation of fabric for dyeing and printing a. Scouring, desizing, bleaching 2. Dyeing: Dyeing of yarn and fabric with different classes of dyes by varying the temperatures, %shade and M: L ratio. a. Dyeing of cotton yarn and fabric with direct dyes, vat and reactive dyes. b. Dyeing of silk, wool and nylon yarn and fabrics with basic and acid dyes. c. Dyeing of polyester yarn and fabric with disperse dyes. 3. Making designs for a. Blocks, stencil and screen 4. Preparation of a. Blocks, stencil and screen 5. Printing of fabrics using: a. Direct style - block, stencil and screen b. Resist style - Tie &Dye, Batik 6. Application of starch by varying concentration and material 7. Natural starch b. Synthetic starch 8. Printing on garments by different styles 9. Product development	<b>30</b>
<b>Pedagogy</b>	Lectures along with power point presentation/ videos on industrial methods/hands on experience for dyeing and printing on textiles/visit to Dyeing and Printing unit	

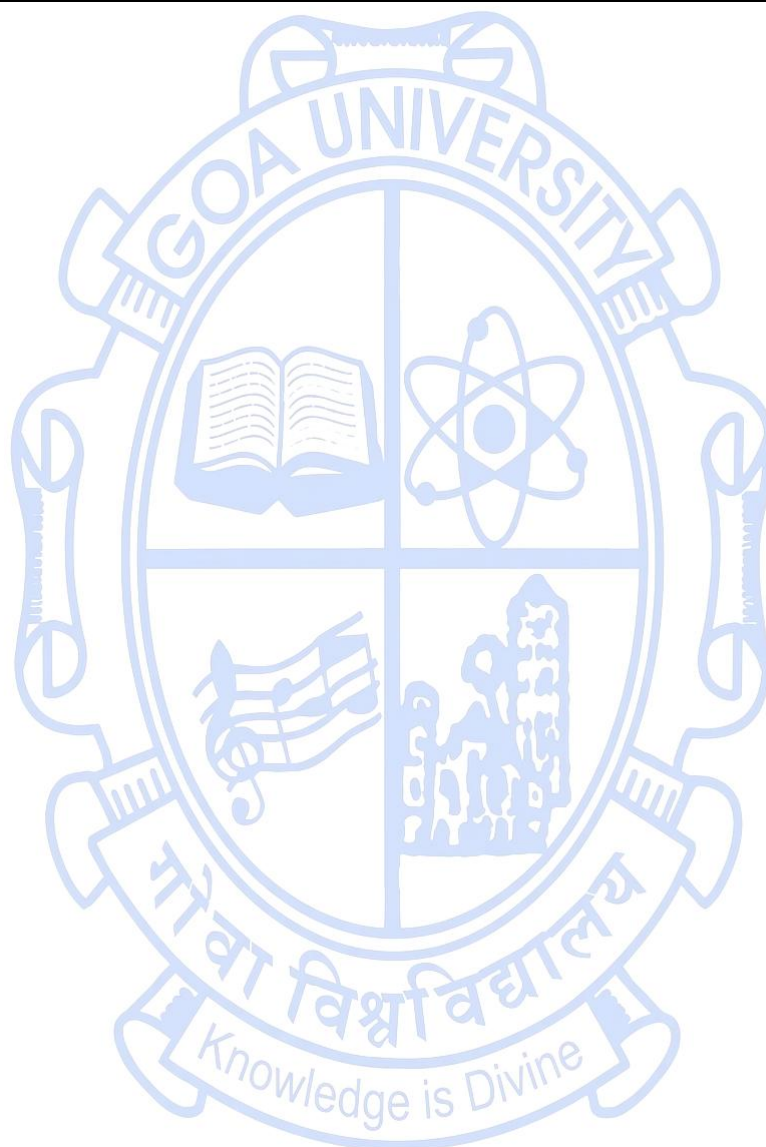
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Chavan, R.B. (1979). Textile Printing (Book of Papers) Department of Textile Technology, IIT New Delhi.</li> <li>2. Giles, G.H. (1974) Laboratory Course in Dyeing Hart &amp; Clough; Bradford; England Kale D.G. (1976) Principles of Cotton Printing. Maharaja Brothers Ahmedabad.</li> <li>3. Saraiya, N.S. &amp; Gupta P.C. Technology and Management of Printing.</li> <li>4. Shenai, V.A. (1979). Chemistry of Dyes and Principles of Dyeing. Sevak Publications Mumbai</li> <li>5. Trotman E.R. (1975). Dyeing and Chemical Technology of Textile Fibre. Charles Griffin &amp; Co. Ltd., London</li> <li>6. Vilensky L.D. &amp; Gohil E.P. G. (1987) Textile Science, An explanation of fiber properties. CBS Publishers &amp; Distribution, Delhi.</li> <li>7. Wynne Andrea (1997). Textiles. The Motivate Series Mcmillain Education Ltd., London.</li> </ol>
<b>Course Outcomes</b>	<p>At the end of this course the learner will be able to</p> <ol style="list-style-type: none"> <li>1. Define fundamental terms like dye, pigment, and color models (CMYK, RGB).</li> <li>2. Identify different types of dyes, printing techniques and motifs used in textile design.</li> <li>3. Understand the pre preparation processes on fabrics like scouring, desizing, and bleaching.</li> <li>4. Perform dyeing on various fibers (cotton, wool, silk, polyester) using different dye types (reactive, disperse, acid, etc.).</li> <li>5. Create and use printing designs (blocks, stencils, screens) and methods (block, screen, tie-dye, batik).</li> <li>6. Compare different dyeing and printing methods in terms of their effectiveness, impact on fabric, and suitability for different fibers.</li> <li>7. Evaluate the influence of various finishing techniques on the texture, appearance, and functionality of textiles.</li> <li>8. Assess the quality of dyed and printed fabrics, including color fastness and print durability.</li> <li>9. Design and develop textile products integrating dyeing, printing, and finishing techniques to meet specific aesthetic or functional requirements.</li> </ol>



**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HST-204  
**Title of the Course** : Garment Construction for Kids wear  
**Number of Credits** : 2T+2P  
**Effective from AY** : 2024-25

<b>Pre-requisites for the Course:</b>	HSC-141 Fundamentals of Clothing Construction	
<b>Course Objectives:</b>	<ul style="list-style-type: none"> <li>To enable the students to develop skills in construction of kids garments of 5 to 10 years old.</li> <li>Learn to cut and stitch garments for different occasions for kids</li> </ul>	
<b>Content</b>		<b>No. of Hours</b>
	<b>Unit I</b> Adaptation of zips, plackets pockets Construction of the following garments: Both for Boys and Girls ( Any two under each category)	<b>6</b>
	<b>Unit II</b> Skirts and Tops, Dress- one piece / two piece. Dresses for various occasion:	<b>6</b>
	<b>Unit III</b> Festival/Feast Weddings (Indian, western and other cultures) School uniforms: Different weather conditions	<b>6</b>
	<b>Unit IV</b> Casual wears and Night wears	<b>6</b>
	<b>Unit V</b> Accessories for kids wear (girls and boys)	<b>6</b>
	<b>PRACTICAL</b> Adaptation of zips, plackets pockets Construction of the following garments: Both for Boys and Girls (Any two under each category)  Skirts and Tops, Dress- one piece / two piece. Dresses for various occasion:  Festival/Feast Weddings (Indian ,western and other cultures) School uniforms: Different weather conditions  Casual wears Night wears Accessories for kids wear ( girls and boys )	<b>60</b>
<b>Pedagogy</b>	Regular lectures, Group discussion, ICT enabled learning experiences Videos.	
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>Connie Amadon Crawford, (1992)' A guide to Fashion Sewing' Fairchild Publishers, USA,</li> <li>Doonga Ji Sherie and Deshpande, R,(1999)'Basic Process and Clothing Construction.</li> <li>Dorothy Wood,( 1997) "Creative Sewing, the practical Encyclopaedia of Sewing". Mc Graw - Hill Book Co. Inc, New York.</li> <li>Selvia Rosen, ( 1995)'Children's Clothing: Designing, Selecting Fabrics, Pattern Making &amp; Sewing, B T Batsford Ltd, London</li> <li>Thomes Anna Jacob, (1999) 'The Art of sewing,' UBS, Publishers distribution Ltd. New Delhi.</li> </ol>	

<p><b>Course Outcomes</b></p>	<p>Students will be able to</p> <ol style="list-style-type: none"> <li>1. <b>Apply</b> techniques to incorporate zips, plackets, and pockets in garment designs for boys and girls.</li> <li>2. <b>Construct</b> skirts, tops, and one-piece/two-piece dresses suitable for various occasions (casual, formal).</li> <li>3. <b>Design and create</b> garments for festivals, weddings (Indian, Western, etc.), and school uniforms considering weather and cultural factors.</li> <li>4. <b>Design and construct</b> comfortable, school uniforms, casual and nightwear for children, ensuring practicality and age-appropriate style.</li> <li>5. <b>Design and construct</b> complementary accessories (hats, scarves, shoes, etc.) for kids' outfits.</li> <li>6. <b>Incorporate</b> accessories into kids' garments, ensuring appropriate design and fit.</li> </ol>
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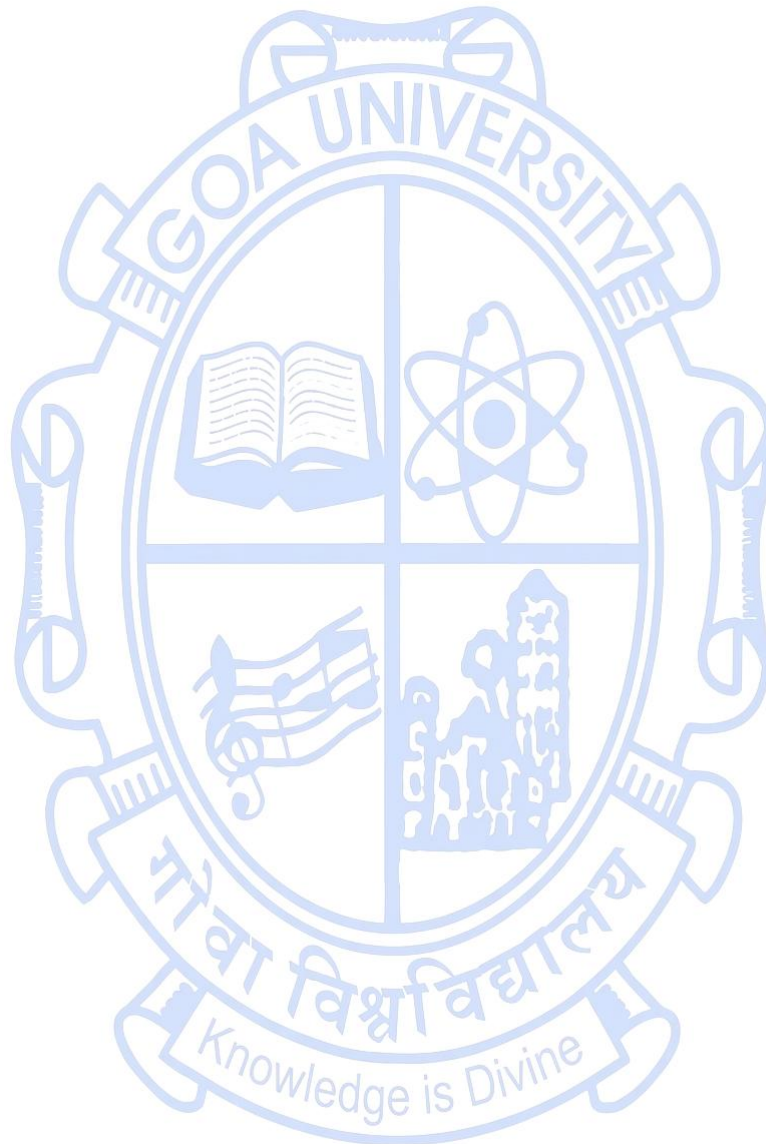
**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HST-205  
**Title of the Course** : Indian Textile heritage  
**Number of Credits** : 2T  
**Effective from AY** : 2024-25

<b>Pre-requisites for the Course:</b>	HSC-141 Fundamentals of Clothing Construction HSC-112 Fibre to Fabric	
<b>Course Objectives:</b>	<ol style="list-style-type: none"> <li>1. Understand the Indian traditional history and its unique textile traditions</li> <li>2. Develops an understanding of the classification of traditional textiles based on the process of making it.</li> <li>3. Learn to differentiate traditional textiles from different parts of the country</li> </ol>	
<b>Content:</b>		<b>No. of Hours</b>
	Unit 1: Study of Textile Crafts of India: with reference to history, production centers, techniques, designs, colours and products . Woven Textiles-Benaras Brocades , Jamdanis and Baluchars of Bengal, Kani Shawls of Kashmir . Embroidered Textiles-Kanthas of Bengal, Kasuti of Karnataka, Phulkari of Punjab, Chikankari of Uttar Pradesh, Kashida of Kashmir, Gujarat embroideries . Painted and Printed textiles – Kalamkaris of Andhra Pradesh, Dabu printing of Rajasthan, Ajarakh prints of Gujarat Dyed textiles –Bandhnis of Rajasthan and Gujarat, Ikats- Patola of Gujarat, Bandhas of Orissa, Telia Rumal	<b>15</b>
	UnitII : Conservation of Traditional Textiles and Status of Traditional Textiles in Modern India Factors influencing degradation of textiles Care and storage techniques Evolution and socio-economic significance of Khadi, Handloom and Handicraft sector Sustenance of traditional textile crafts .Interventions by organizations	<b>15</b>
<b>Pedagogy:</b>	Lectures along with power point presentation/ videos on industrial methods/hands on experience for dyeing and printing on textiles/visit to Dyeing and Printing unit	
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Aparna Gawande (2017), Designs from Indian Textile, , tory Mirror Infotech Pvt Ltd</li> <li>2. Agarwal, O.P., (1977), Care and Presentation of Museum projects – II, NRL</li> <li>3. Chattopadhaya, K.D., 1995, Handicrafts of India, Wiley Eastern Limited, N Delhi</li> <li>4. Shailaja D. Naik, (2010)“Traditional Embroideries of India”, API Publishing Corporation, New Delhi</li> </ol>	
<b>Course Outcomes</b>	<p>Students will be able to</p> <ol style="list-style-type: none"> <li>1. Identify, describe and appreciate key traditional textile crafts of India, including woven, embroidered, painted, printed, and dyed textiles.</li> <li>2. Understand the history, production centers, techniques, and cultural significance of these textiles.</li> <li>3. Recognize factors that cause degradation of textiles and apply appropriate care and storage techniques to preserve them.</li> <li>4. Evaluate the socio-economic impact of Khadi, handloom, and handicraft sectors.</li> <li>5. Utilize traditional textiles in contemporary context.</li> <li>6. Analyze the efforts and challenges in sustaining traditional textile crafts in modern India, including the role of organizations.</li> </ol>	

**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HST-221  
**Title of the Course** : Product Development in Textiles & Apparel  
**Number of Credits** : 2T+2P  
**Effective from AY** : 2024-25

<b>Pre-requisites for the Course:</b>	HSC-141 Fundamentals of Clothing Construction HSC-112 Fibre to Fabric	
<b>Course Objectives:</b>	<ul style="list-style-type: none"> <li>To develop skills to analyze the apparel products</li> <li>Learn to develop a new product for specific end use</li> </ul>	
<b>Content:</b>		<b>No. of Hours</b>
	<b>Unit I Concept Development and Design Instigation</b> • Meaning and importance • Key elements in Product designing- fashion trends , product function and added value • Developing creative idea based on concept • Making flat sketches of developed idea	<b>8</b>
	<b>Unit II Analysis and Selection</b> • Sourcing and Procurement-Concept and Definitions • Need and methods of Sourcing, Major producers and suppliers of raw materials Dyes, Yarns, Fabrics and Trims • Review of designs for individual strengths relation to the concept and their estimated cost • Finalizing the blue print of the final product	<b>7</b>
	<b>Unit III Development Process</b> • Conceptualization of the details of the product • Prepare/ develop specification sheets of the selected product	<b>5</b>
	<b>Unit IV Fabrication and Cost Analysis</b> • Construction of the final product • Display of the article • Economic analysis of products - Calculation of monetary values of different determinants of total product cost - Labour cost calculation Learning Experiences • Visit to various production unit and analyze product development process • Develop prototypes of good quality marketable products	<b>10</b>
<b>PRACTICAL</b> A portfolio to be maintained on the topics <ul style="list-style-type: none"> <li>Concept Development</li> <li>Design Instigation</li> <li>Analysis and Selection</li> <li>Development Process</li> <li>Fabrication</li> <li>Cost Analysis</li> </ul> Developing creative idea based on any two themes Making flat sketches of developed idea (Five of each theme) Two articles to be made by each students	<b>60</b>	
<b>Pedagogy</b>	Lectures along with power point presentation/ videos on industrial methods/hands on experience for dyeing and printing on textiles/visit to Dyeing and Printing unit	
<b>References/ Readings:</b>	1. Frings G.S. (2001) "Fashion from Concept to Consumer" Prentice Hall, New Jersey. 2. Sundram & Rudradatt (1986) Indian Economy , Sultanchand & Sons. 3. Wingate J.W., Schaller E.O. & Miller F. L.(latest edition) Retail Merchandise Management, Prentice Hall, New Jersey.	
<b>Course Outcomes</b>	The students will be able to <ol style="list-style-type: none"> <li>Define key concepts and elements in product design, including fashion trends, product function, sourcing, and procurement methods.</li> <li>Explain the importance of concept development, sourcing strategies, and cost analysis in the overall product design process.</li> <li>Develop creative design ideas and translate them into flat sketches and specification sheets.</li> </ol>	

4. Apply sourcing techniques to identify appropriate materials and suppliers for product creation.
5. Critically analyze design concepts for strengths, feasibility, and alignment with market trends and production capabilities.
6. Evaluate the economic viability of product designs, considering factors like cost, labor, and material constraints.
7. Create detailed technical specifications and prototypes that meet the design concept, cost, and quality standards.
8. Finalize the blueprint of a product, integrating functional, aesthetic, and economic considerations for production.



Semester V

Name of the Programme : B.Sc. Home Science

Course Code : HST-300

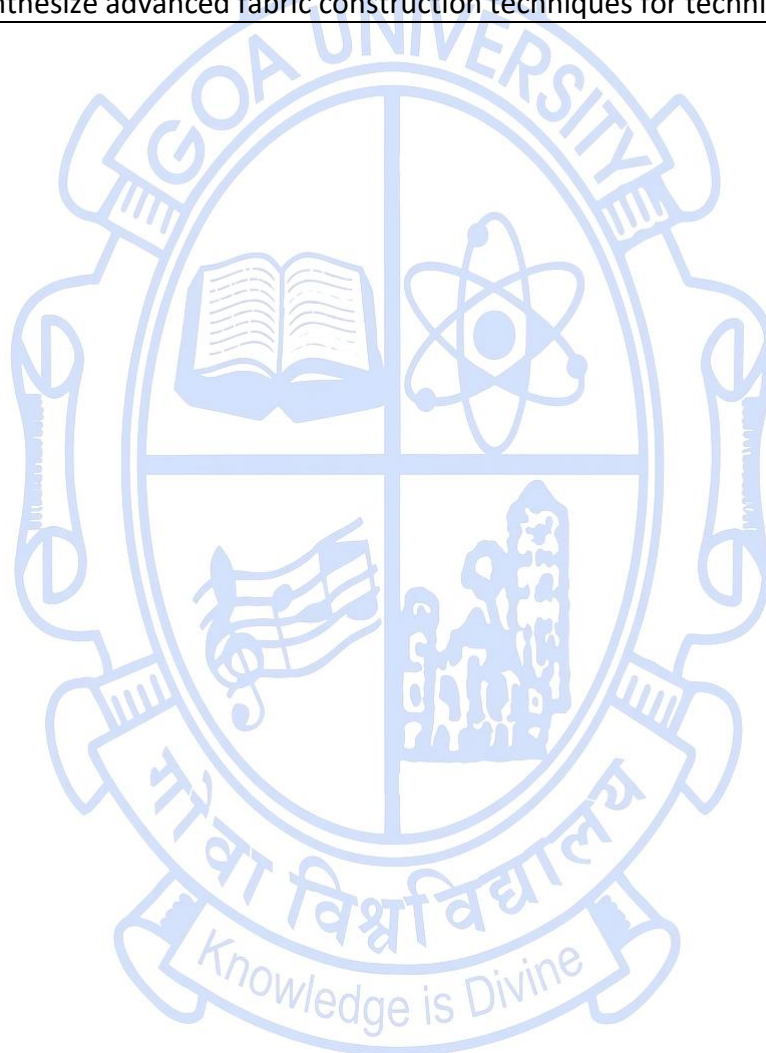
Title of the Course : Fabric Construction

Number of Credits : 3T+ 1P

Effective from AY : 2025-26

<b>Pre-requisites for the Course:</b>	SY BSc Home Science -Textiles and Fashion Studies	
<b>Course Objectives:</b>	<ol style="list-style-type: none"> <li>1. To help students learn various fabric construction techniques with reference to consumer and technical textiles.</li> <li>2. To help students to understand the creation of basic and complex weaves including other methods of creating visual effects.</li> <li>3. To familiarize students with the various knitted and non-woven fabrics.</li> </ol>	
<b>Content</b>		<b>No. of hours</b>
	<b>Unit 1</b> Introduction to Fabric Construction Definition and significance of fabric construction Classification of fabrics based on construction methods Role of fiber, yarn, and weave structure in fabric formation Comparison of woven, knitted, and non-woven fabrics	<b>10</b>
	<b>Unit 2</b> Fabrics made from Fibres, Yarns and Non-Fibrous materials- Properties and uses	<b>15</b>
	<b>Unit 3</b> Weaving- Loom- Parts, Mechanism and Types Elementary weaves- Plain, Twill and Satin- Its derivatives, properties and uses. Complex weaves: Huck-a-back, honeycomb, mock leno, Bedford cord, welt and pique, extra warp and weft, colour and weave effects, their properties and use. Recent advances in weaving.	<b>20</b>
	Practical <b>Weaving Basics:</b> Operate a handloom or table loom to create plain and twill weaves. <b>Knit Sample Development:</b> Produce basic knit structures using hand or machine techniques. <b>Non-Woven Fabric Formation:</b> Create felt or bonded fabric samples and analyze their properties. <b>Fabric Analysis:</b> Identify and document fabric structures under a textile microscope. <b>Testing Fabric Strength &amp; Performance:</b> Conduct tensile strength, stretch, and shrinkage tests. <b>Innovative Fabric Construction Project:</b> Develop a unique fabric sample using a combination of techniques.	<b>30</b>
<b>Pedagogy:</b>	Regular lectures and practical ICT enabled learning experience	
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Black, M. E. (1996). The key to weaving New York: Macmillan.</li> <li>2. Brown, R. (1978). Weaving, spinning and dyeing book. London: Routledge&amp; Kegan Paul.</li> <li>3. Corbman, B. P. (1983) Fibre to Fabric step by step weaving (6<sup>th</sup> Ed.) New York: McGraw Hill.</li> <li>4. Fannin &amp; Allen. A. (1979). Handloom weaving technology. New York: Van Nostrand Reinhold.</li> <li>5. Grosicki, Z. J. (1980). Watson's textile design and color. London: Newness Butterworths.</li> <li>6. Hollen, Norma. (1988). Textiles. (6<sup>th</sup> Ed.) New York: Macmillan publishing company.</li> <li>7. Kishor, Punett. (1990). Weaving technology in India- Jacquards. New Delhi.</li> <li>8. Kulkarni, M. M. (1998). Weaving technology. Jalgaon: Vrinda publications.</li> <li>9. Murray, r. (1981). The essential handbook of weaving. London: Bell and Hyman.</li> <li>10. Nisbet, H. (1978). Grammar of textile design. Bombay: Taraporewala Sons.</li> </ol>	

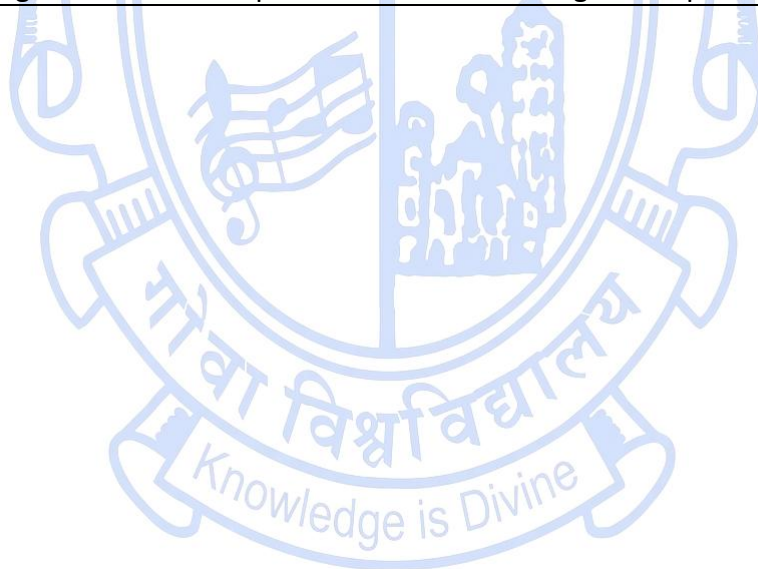
	<p>11. Oelsner, G. H. (1982). A handbook of weaves, New York: Dover.</p> <p>12. Plath, I. (1972). The craft of hand-weaving. New York: Clark's Scribner's Sons.</p> <p>13. Sengupta, R. (1982). Weaving calculation. Bombay:D. B.</p>
<b>Course Outcome:</b>	<p>The students will be able to</p> <ol style="list-style-type: none"> <li>1. Define fabric construction techniques and explain their significance.</li> <li>2. Identify properties and uses of fabrics made from fibers, yarns, and non-fibrous materials.</li> <li>3. Understand the parts, mechanism, and types of looms.</li> <li>4. Recognize elementary weaves and their derivatives.</li> <li>5. Describe complex weaves and their applications in technical textiles.</li> <li>6. Analyze recent advances in weaving technology and innovations.</li> <li>7. Differentiate between traditional and modern weaving techniques.</li> <li>8. Apply knowledge to create a portfolio of diverse weave samples.</li> <li>9. Demonstrate the ability to identify and classify weaves through practical experience.</li> <li>10. Synthesize advanced fabric construction techniques for technical and consumer use.</li> </ol>



**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HST-301  
**Title of the Course** : Textile Testing and Laundry Science  
**Number of Credits** : 3T+1P  
**Effective from AY** : 2025-26

<b>Pre-requisites for the Course:</b>	SY BSc Home Science -Textiles and Fashion Studies	
<b>Course Objectives:</b>	1. To introduce students to different methods of testing quality assurance followed at various stages from fiber to garment. 2. To make students familiar to laundry procedures.	
<b>Content</b>		<b>No. of hours</b>
<b>Unit 1</b>	Textile testing of fibers and yarns Qualitative and quantitative Types and size/number	<b>5</b>
<b>Unit 2</b>	Testing of fabrics Length, width, fabric count, weight and thickness Air and water permeability, Shrinkage, Wrinkle resistance and crease recovery, Abrasion resistance and pilling resistance Fabric stiffness and drapability, Flammability, Tensile strength	<b>9</b>
<b>Unit 3</b>	Testing of garments Colourfastness check (Rub test), Symmetry check Size fitting test, Adhesive check (logos, printing, marking fastness), Fabric weight test (for knitted garments) Fasteners fatigue and zip quality test, Waterproof test Seam slippage test (for woven garments), Care labeling Burn test (for 100% cotton garment), Seam strength Puckering	<b>9</b>
<b>Unit 4</b>	Laundry Science Laundry equipment and their use. Soaps and supplies- Soaps and detergents- stiffening agents- Blueing agents, Bleaching and other Laundry reagents, grease absorbents and solvents, Dry cleaning of clothes (principle and use). Stains- Classification stains, methods of removing different types of stains, Storage of clothes.	<b>12</b>
<b>Unit 5</b>	Fabric finishes a) Physical- Singeing, napping, sizing, tentering and calendaring. b) Chemical- Bleaching, mercerizing.c) Special purpose finishes- Wrinkle resistant, Water resistant and repellent, flame retardant.	<b>10</b>
<b>Practical</b>	1. Yarn Count and Twist Measurement 2. Shrinkage and growth of fabrics after washing, 3. Tensile Strength & Tear Strength, Abrasion & Pilling Resistance, Air Permeability & Water Absorption, Color Fastness, Crease Recovery & Stiffness. 4. Stain Removal Techniques 5. Bleaching & Whitening Treatments 6. Fabric Softening & Conditioning 7. Ironing & Pressing Techniques – Demonstrate correct pressing methods for cotton, silk, wool, and synthetics. 8. Eco-Friendly & Sustainable Laundry Practices	<b>30</b>
<b>Pedagogy:</b>	Regular lectures and practical ICT enabled learning experience	
<b>References/ Readings:</b>	Reference Books: 1. <b>Arora, S. (2017).</b> <i>Textile Testing and Quality Control</i> . New Delhi: Abhishek Publications.	

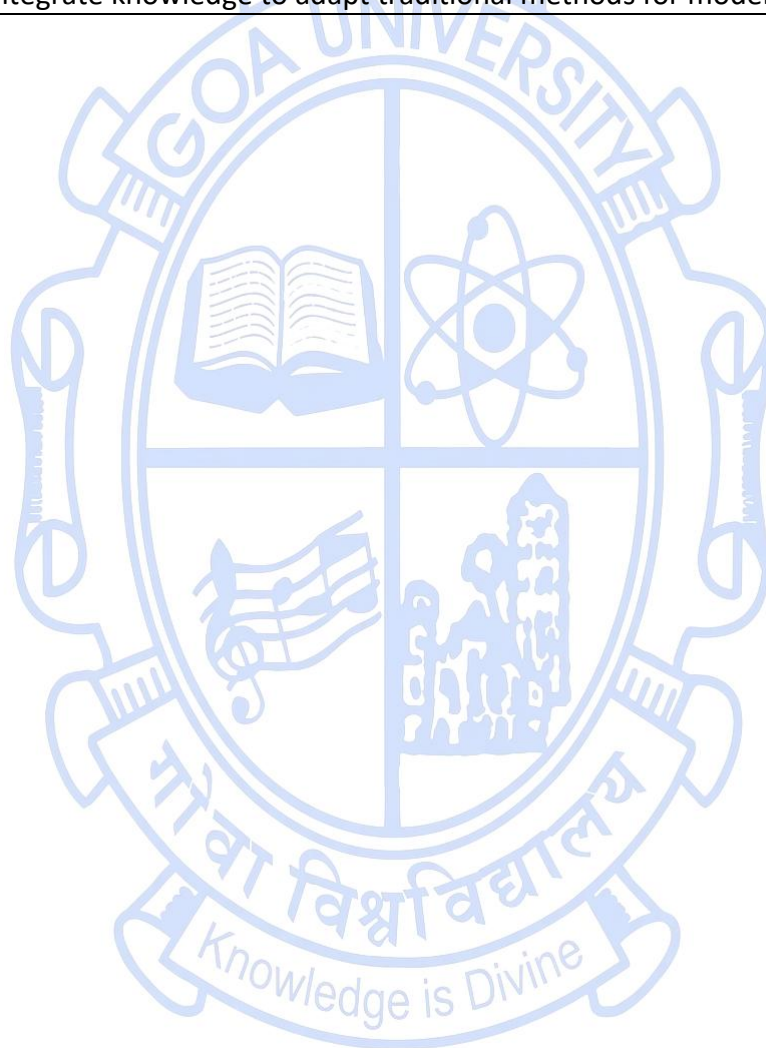
	<ol style="list-style-type: none"> <li>2. <b>Booth, J. E. (1996).</b> <i>Principles of Textile Testing</i>. New Delhi: CBS Publishers &amp; Distributors.</li> <li>3. <b>Das, S., &amp; Ghosh, A. (2019).</b> <i>Fundamentals of Textile Testing</i>. New Delhi: Woodhead Publishing India.</li> <li>4. <b>Gohl, E. P. G., &amp; Vilensky, L. D. (2009).</b> <i>Textile Science: An Introduction to Fibres, Yarns and Fabrics</i>. New Delhi: CBS Publishers.</li> <li>5. <b>Gupta, S. (2015).</b> <i>Fabric Testing: Theory and Practice</i>. New Delhi: Woodhead Publishing India.</li> <li>6. <b>Karmakar, S. R. (1999).</b> <i>Chemical Technology in the Pre-Treatment Processes of Textiles</i>. New Delhi: Elsevier India.</li> <li>7. <b>Patel, S. (2021).</b> <i>Advances in Textile Testing and Quality Control</i>. New Delhi: Academic Press.</li> <li>8. <b>Ramaswamy, R., &amp; Krishnan, R. (2014).</b> <i>Textile Finishing: Chemistry and Applications</i>. Mumbai: National Institute of Fashion Technology (NIFT).</li> <li>9. Rouette, H. K. (2001). <i>Encyclopedia of Textile finishes</i>. Berlin: Springer Verlag.</li> <li>10. <b>Shenai, V. A. (2000).</b> <i>Technology of Textile Processing: Testing and Quality Control</i>. Mumbai: Sevak Publications.</li> </ol>
<p><b>Course Outcome:</b></p>	<p>A successful completion of this course will enable students to</p> <ol style="list-style-type: none"> <li>1. Define textile testing parameters and their role in quality assurance.</li> <li>2. Explain methods for testing fibers, yarns, and fabrics for quality and durability.</li> <li>3. Identify standards for textile testing, including air and water permeability and shrinkage.</li> <li>4. Understand the principles of wrinkle resistance, abrasion resistance, and fabric stiffness.</li> <li>5. Evaluate laundry reagents and stain removal techniques for various fabrics.</li> <li>6. Compare physical and chemical fabric finishes and their effects on textiles.</li> <li>7. Apply knowledge to test garment properties like seam strength and colorfastness.</li> <li>8. Develop proficiency in dry cleaning and laundry processes.</li> <li>9. Assess the eco-friendliness of laundry agents and fabric finishes.</li> <li>10. Design and maintain a portfolio of textile testing techniques and results.</li> </ol>



**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HST-302  
**Title of the Course** : Pattern Drafting and Draping (Basics)  
**Number of Credits** : 2T+2P  
**Effective from AY** : 2025-26

<b>Pre-requisites for the Course:</b>	SY BSc Home Science -Textiles and Fashion Studies	
<b>Course Objectives:</b>	1. To make students master the bodice block development and variations via pattern making techniques. 2. To achieve proficiency in creating basic bodice and skirt patterns through draping. 3. To apply advanced draping to create two unique designs, showcasing creativity in garment construction.	
<b>Content</b>		<b>No. of hours</b>
	<b>Unit I:</b> Introduction to Pattern Making, Tools, terms and techniques, Fabric terms, Dart and grain line	<b>6</b>
	<b>Unit II:</b> Basic Upper and lower Sloper Principles in pattern making for Upper garment, Lower garment, Sleeves, Collars, Dresses	<b>6</b>
	<b>Unit III:</b> Introduction to Draping Basic Preparation – Equipment, dress form and preparation of muslin Basic Patterns – Basic Bodice, Basic Skirt Pattern Making Principles	<b>6</b>
	<b>Unit IV:</b> Designing of the Bodice, Dart Variation, Princess line, Added fullness, Necklines including cowl	<b>6</b>
	<b>Unit V:</b> Design Variations Midriff, Yokes, Collars – Flat, Roll and Stand collars	<b>6</b>
	<b>PRACTICAL</b> Development of the Bodice Block and its variations through pattern making Dart manipulation Contouring Fullness Principles Skirts, Sleeves and Collars (two each)  Development of basic patterns (Bodice and Skirt) Block through draping  Two design methods using fabric draping Bodice Neckline Sleeves Skirts Dress	<b>60</b>
<b>Pedagogy:</b>	Regular lectures and practical ICT enabled learning experience	
<b>References/ Readings:</b>	Text Books/ Reference Books: 1. Kiisel K. (2013), Draping: The Complete Course, Laurence King Publishing. 2. Armstrong, H.J. (2009), Pattern Making for Fashion Design, Harper Collins Publishers, INC, New York.	

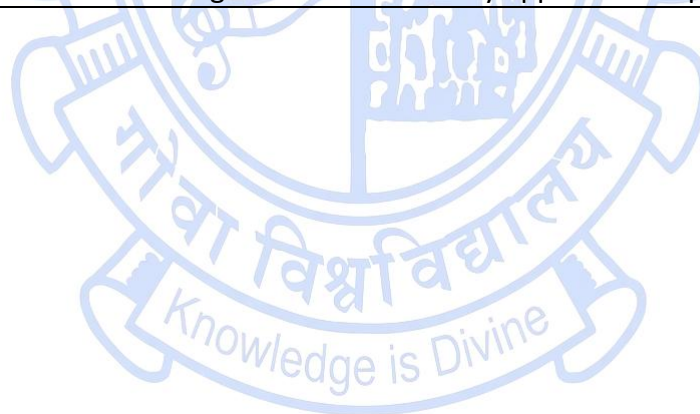
<p><b>Course Outcome:</b></p>	<p>A successful completion of this course will enable students to</p> <ol style="list-style-type: none"> <li>1. Learn pattern-making for bodices and skirts, including draping techniques.</li> <li>2. Develop basic patterns through fabric draping.</li> <li>3. Apply fabric draping for diverse garment designs.</li> <li>4. Define key tools, terms, and principles used in pattern drafting and draping.</li> <li>5. Identify fabric characteristics, including grainline and dart manipulation.</li> <li>6. Demonstrate the creation of upper and lower garment slopers through pattern drafting.</li> <li>7. Apply advanced techniques such as princess line and neckline variations.</li> <li>8. Create basic bodice and skirt patterns using draping techniques.</li> <li>9. Evaluate fitting techniques for diverse body types and garment styles.</li> <li>10. Analyze variations in patterns using fullness and contouring principles.</li> <li>11. Synthesize innovative garment designs using advanced draping methods.</li> <li>12. Compile a portfolio showcasing creative draping and pattern-making results.</li> <li>13. Integrate knowledge to adapt traditional methods for modern garment construction.</li> </ol>
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**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HST-303  
**Title of the Course** : CAD in Apparel Design  
**Number of Credits** : 2P  
**Effective from AY** : 2025-26

<b>Pre-requisites for the Course:</b>	SY BSc Home Science -Textiles and Fashion Studies	
<b>Course Objectives:</b>	1. To familiarize with Adobe Photoshop and Illustrator for design proficiency. 2. To explore the synergy between technology and creativity. 3. To acquire fundamentals of computer-aided pattern making. 4. To cultivate comprehensive fashion design skills within a digital production framework.	
	<b>Content</b>	<b>No. of hours</b>
<b>Unit 1</b>	<b>Basics of Computer</b> Introduction to Vector and Raster graphics Understanding the colour models Understanding the interface and various tools of selected software	<b>10</b>
<b>Unit 2</b>	<b>Introduction to CAD software</b> Drawing tools and functions Corel draw Photoshop Illustrator Creating motifs for print and embroidery designs for fabrics. Creating a label and logo for design house	<b>10</b>
<b>Unit 3</b>	<b>CAM technologies (integration of CAD)</b> Creating designs for embroidery, dyeing and printing Plain weave, Twill weave and satin weave simulations using weave design software Dobby and Jacquard pattern using pixloom/weavelt Pro	<b>10</b>
<b>Unit 4</b>	<b>Using CAD technology for Patternmaking</b> Basic Bodice Block Princess Bodice Yoke Bodice Basic Sleeves Basic Skirt Block Basic Pant Block Grading of Patterns	<b>10</b>
<b>Unit 5</b>	Project Design a female garment, male garment and kids wear from the categories given below and also evaluate the cost. a. Female garment categories Formal Wear/ Ethnic Wear/Casual Wear b. Male garment categories Formal Wear/ Ethnic Wear/Casual c. Kids wear categories Formal Wear/ Ethnic Wear/Casual Wear	<b>20</b>
<b>Pedagogy:</b>	Regular lectures and practical ICT enabled learning experience	
<b>References/ Readings:</b>	Text Books/ Reference Books: 1. Burke.Sandra, 2006, Fashion Computing: Design Techniques and CAD, Burke Publishing U.K 2. Centner M. and Vereker F. (2011), Fashion Designers Handbook for Adobe Illustrator, Second Edition, A John Wiley & Sons, Ltd, Publication, United Kingdom. 3. Duggal, V., (2000). Cadd Primer: A General Guide to Computer Aided Design and DraftingCadd, CAD. Mailmax Pub. ISBN978-0962916595.	

	<ol style="list-style-type: none"> <li>4. Farin, G., Hoschek, J., Kim, M, (2002). Handbook of computer aided geometric design [electronic resource]. Elsevier. ISBN978-0-444-5110</li> <li>5. Grazia, (2018), CAD High computer technology for apparel manufacture. URL:<a href="http://www.saprgrazia.com">http://www.saprgrazia.com</a></li> <li>6. Hume.Robert, 2016, Fashion and Textile Design with Photoshop and Illustrator:Professional Creative Practice, Fairchild Books, U.K.</li> <li>7. lynetOndogan. (2006), The Comparison of the Manual and CAD Systems for Pattern Making, Grading and Marker Making Processes. Cetin Erdogan in Fibers and Textiles in Eastern Europe.</li> <li>8. Madsen, David A. (2012). Engineering Drawing &amp;Design.Clifton Park, NY: Delmar.ISBN978-1111309572.</li> <li>9. Narayan, K. Lalit (2008). Computer Aided Design and Manufacturing. New Delhi: Prentice Hall of India. ISBN978-8120333420.</li> <li>10. Narayan, K. Lalit (2008). Computer Aided Design and Manufacturing. New Delhi: Prentice Hall of India. ISBN978-8120333420.</li> <li>11. Seema, K., (2012), Significance of Digital Platform in Apparel Product Development for Exports. JM International Journal of Management Research.</li> <li>12. Stewart-Smith, 2013, CAD for Fashion Design and Merchandising, Bloomsbury Publishing India Private Limited</li> </ol>
<p><b>Course Outcomes:</b></p>	<p>A successful completion of this course will enable students to</p> <ol style="list-style-type: none"> <li>1. Define the basics of CAD software, including vector and raster graphics.</li> <li>2. Explain the use of color models and drawing tools in design software.</li> <li>3. Apply CAD techniques to create motifs for prints and embroidery.</li> <li>4. Develop skills in designing logos, labels, and fabric patterns using software like Illustrator.</li> <li>5. Integrate CAD with CAM technologies for creating textile simulations.</li> <li>6. Evaluate the role of CAD in developing woven and knitted fabric designs.</li> <li>7. Analyze the impact of CAD on garment pattern-making and grading.</li> <li>8. Design a range of garments (male, female, and kids) using CAD tools.</li> <li>9. Assess the effectiveness of digital production techniques in the fashion industry.</li> <li>10. Synthesize CAD designs into market-ready apparel concepts.</li> </ol>



**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HST-321  
**Title of the Course** : Fashion Communication  
**Number of Credits** : 2T+ 2P  
**Effective from AY** : 2025-26

<b>Pre-requisites for the Course:</b>	SY BSc Home Science	
<b>Course Objectives:</b>	1. To familiarize students to the various mediums of fashion communication 2. To introduce the students to the Visual side of communication 3. To make the students to plan and design an event	
<b>Content</b>		<b>No. of hours</b>
	<b>Unit 1 Introduction to Fashion Communication</b> Definition and scope of fashion communication Role of communication in the fashion industry Evolution of fashion communication: From print to digital	<b>5</b>
	<b>Unit 2: Fashion Branding &amp; Marketing Communication</b> Basics of fashion branding: Brand identity, positioning, and storytelling Marketing strategies in fashion: Traditional vs. digital approaches Consumer behavior and psychology in fashion marketing Case studies of successful fashion campaigns	<b>5</b>
	<b>Unit 3: Visual Communication in Fashion</b> Role of photography, graphics, and illustrations in fashion Fashion styling and image-making for campaigns Typography and layout design for fashion magazines and social media Mood boards, lookbooks, and digital presentations	<b>5</b>
	<b>Unit 4: Fashion Journalism &amp; Writing</b> Principles of fashion journalism: News vs. editorial writing Reviewing fashion shows, designers, and collections Blog writing and content creation for digital platforms Interviewing designers and fashion influencers	<b>5</b>
	<b>Unit -5: Public Relations &amp; Event Management in Fashion</b> Role of PR in fashion: Press releases, media relations, and celebrity endorsements Organizing fashion events: Fashion weeks, exhibitions, and product launches Crisis management and brand reputation in fashion PR	<b>5</b>
	<b>Unit 6: Digital &amp; Social Media in Fashion Communication</b> Social media strategies for fashion brands Influencer marketing and collaborations Role of Artificial Intelligence (AI,) Augmented Reality (AR) and Virtual Reality (VR) in fashion communication	<b>5</b>
	<b>PRACTICAL</b> Fashion Blogging & Content Writing Write a 300-500 word blog post on a current fashion trend or favorite designer. Create a social media caption for a fashion brand's Instagram post. 2. Mood Board Creation Develop a digital or physical mood board for a fashion brand, focusing on colors, fabrics, and themes. Choose a celebrity or influencer and create a style inspiration board. 3. Basic Fashion Photography Take 5-10 photos of an outfit that tells a story (street style, casual, formal). Edit images using a free app like Canva or Lightroom to enhance the aesthetic. 4. Social Media Strategy for a Fashion Brand	<b>60</b>

	<p>Analyze the Instagram profile of a well-known fashion brand and identify key strategies.</p> <p>Design a week-long social media calendar with post ideas and captions.</p> <p>5. Writing a Simple Press Release Write a one-page press release announcing a new fashion collection. Use a professional format, including a headline, quotes, and contact information.</p> <p>6. Introduction to Fashion Journalism Conduct a short interview (via email or phone) with a local boutique owner or fashion enthusiast. Summarize the interview into a 500-word article.</p> <p>7. Fashion Trend Research Pick a fashion era (e.g., 90s, Y2K, boho) and create a one-page trend report. Include pictures and descriptions of key styles from that era.</p> <p>8. Fashion Show Commentary Watch a recent fashion show online (e.g., Paris Fashion Week) and write a brief review of the collection. Describe the key looks, colors, and overall vibe.</p> <p>9. Designing a Simple Fashion Advertisement Create a poster or social media ad for a clothing brand using free design tools like Canva. Include a catchy slogan and a product image.</p> <p>10. Sustainable Fashion Awareness Post Design an Instagram carousel post or infographic promoting ethical fashion. Include key facts about sustainable materials and brands.</p> <p>Maintain a Portfolio for the practical</p>	
<b>Pedagogy:</b>	Regular lectures and practical ICT enabled learning experience	
<b>References/ Readings:</b>	<p>Text Books/ Reference Books:</p> <ol style="list-style-type: none"> <li>1. Shannon Burns-Tran. (2013). <i>Style Wise-A Practical Guide to Becoming a Fashion Stylist</i>. Bloomsbury Academic Publishing, London</li> <li>2. Jon Cope, Dennis Maloney. (2016). <i>Fashion Promotion in Practice</i>. Fairchild Publications, New York</li> <li>3. Jay Diamond. (2011). <i>Retail Advertising and Promotion</i>. Fairchild Publications, New York</li> </ol>	
<b>Course Outcome:</b>	<p>On successful completion of this course will enable students to</p> <ol style="list-style-type: none"> <li>1. Understand Fashion Communication by defining its scope, role in the industry, and evolution from print to digital platforms.</li> <li>2. Apply branding and marketing strategies by analyzing storytelling, consumer behavior, and marketing techniques relevant to fashion.</li> <li>3. Utilize visual communication tools such as photography, graphics, typography, and mood boards in fashion campaigns.</li> <li>4. Enhance skills in fashion journalism and writing by developing articles, blogs, interviews, and editorial reviews.</li> <li>5. Master public relations and event management through media relations, press release writing, and fashion event planning.</li> <li>6. Leverage digital and social media by assessing strategies, influencer marketing, and emerging online techniques.</li> <li>7. Develop practical skills in creating fashion content, photography, social media campaigns, and advertisements.</li> </ol>	

Semester VI

Name of the Programme : B.Sc. Home Science

Course Code : HST-304

Title of the Course : Apparel Production

Number of Credits : 2T+2P

Effective from AY : 2025-26

<b>Pre-requisites for the Course:</b>	SY BSc Home Science – Textiles and Fashion Studies	
<b>Course Objectives:</b>	<ol style="list-style-type: none"> <li>1. Learn garment construction essentials like seams, plackets, and pleats.</li> <li>2. Master drafting and creating personalized bodices, skirts, and sleeves.</li> <li>3. Develop skills in style variation, adapting blocks into different designs.</li> </ol>	
<b>Content</b>		<b>No. of hours</b>
	<b>Unit I: Introduction to Pattern Making</b> Importance of taking body measurements Importance of patterns and pattern information Methods of pattern making Rules of pattern making Principles of pattern making	<b>6</b>
	<b>Unit II: Preparatory Steps for Garment Construction</b> Fabric grain Preparatory steps- preshrinking, straightening and truing Layouts for patterns- general guidelines, basic layouts- lengthwise, partial lengthwise, crosswise, double fold, open, combination fold Pinning, marking and cutting Layouts for fabrics- Unidirectional, bold and large prints, plaids, stripes and checks, various widths of fabrics	<b>6</b>
	<b>Unit III: Seams and Finishing of Raw Edges</b> Types of seams- plain and its finishing, flat, ridge, decorative Additional seam techniques: clipping, notching, grading, trimming, easing, under stitching, stay stitching, trimming a corner. Crossway strips-importance and applications Finishing of hemlines	<b>6</b>
	<b>Unit IV: Study of Garment Components: Application and Construction</b> Classification and application of sleeves, cuffs, collars, necklines, plackets, pockets, yokes, trims and accessories	<b>6</b>
	<b>UNIT V: Design and Fit</b> Designing for different figure types Fit: Fitting area, fitting guidelines, fitting procedure	<b>6</b>
	<b>PRACTICAL</b>  Development and identification of : Seams, plackets, fasteners, edge finishing (binding, facing), pleats and gathers  Development of bodice, skirt and various sleeves and collars for self  Develop style variations in adult bodice using dart manipulation on half scale standard block  Adaptation of basic skirt block into style variations (Half scale)  Construction of skirt for self	<b>60</b>

	Construction of ladies shirt/ kurta for self	
	Construction of formal dress for self	
<b>Pedagogy:</b>	Regular lectures and practical ICT enabled learning experience	
<b>References/ Readings:</b>	Text Books/ Reference Books: 1. Aldrich, W. (2015). <i>Metric pattern cutting for women's wear</i> (6th ed.). Wiley-Blackwell. 2. Agarwal, M. (2023). <i>NSQF (Level 3) Dress Making Theory (I Year)</i> . Arihant Publications India Limited. 3. Armstrong, H. J. (2010). <i>Patternmaking for fashion design</i> (5th ed.). Pearson Education. 4. Bray, N. (2003). <i>Dress fitting: Basic principles and practice</i> (4th ed.). Blackwell Publishing. 5. Chishti, R. K. (2010). <i>Saris: Tradition and beyond</i> . Mapin Publishing Pvt. Ltd. 6. Gupta, V., Khurana, S., & Gaba, A. K. (2020). <i>Introduction to pattern making</i> . eGyanKosh. 7. Joseph, H., & Seema, R. (2015). <i>Textbook of clothing construction</i> . Kalyani Publishers. 8. Pravindoss, T. (2018). <i>Practical pattern making: A step-by-step guide</i> . Independently published. 9. Rasband, J. A., Liechty, E. G., & Pottberg-Steineckert, J. (2004). <i>Fitting and pattern alteration: A multi-method approach to the art of style selection, fitting, and alteration</i> (2nd ed.). Fairchild Publications. 10. Ranjan, A., & Ranjan, M. P. (2009). <i>Handmade in India: A geographic encyclopedia of Indian handicrafts</i> . Mapin Publishing Pvt. Ltd. 11. Srivastava, M. (2011). <i>A T.B. of computer aided apparel fashion designing &amp; production pattern making</i> . Himanshu Publications. 12. Verma, G., & Dev, K. (2022). <i>Cutting and tailoring theory</i> . Asian Publishers.	
<b>Course Outcomes:</b>	The students will be able to 1. Understand the importance of taking accurate body measurements. 2. Explain preparatory steps in garment construction, including grainline and fabric layout. 3. Identify and apply different types of seams and raw-edge finishing techniques. 4. Classify garment components such as sleeves, collars, and pockets. 5. Demonstrate the ability to create skirts, bodices, and sleeves using standard patterns. 6. Evaluate fitting guidelines and procedures for various body types. 7. Develop style variations using dart manipulation and other advanced techniques. 8. Construct formal and casual garments with professional finishing. 9. Create a portfolio showcasing diverse garment designs and construction techniques. 10. Synthesize traditional and modern methods to enhance garment production.	

**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HST-305  
**Title of the Course** : Traditional Costumes of India  
**Number of Credits** : 3T+1P  
**Effective from AY** : 2025-26

<b>Pre-requisites for the Course:</b>	SY BSc Home Science – Textiles and Fashion Studies	
<b>Course Objectives:</b>	1. Learns the characteristics features of the traditional costumes of different of India 2. Develop an understanding of the technique of traditional embroidery	
<b>Content</b>		<b>No. of hours</b>
	Unit 1 Introduction to Indian Traditional Costumes Evolution of clothing in India: Ancient, Medieval, and Modern periods Influence of geography, climate, and culture on Indian attire Role of religion, social status, and customs in clothing choices	5
	Unit 2 Traditional costume of Northern India: Jammu and Kashmir, Punjab, Uttar Pradesh, Himachal Pradesh, Uttarakhand and Haryana	6
	Unit 3: Traditional costume of Western and Central India Rajasthan, Gujarat, Maharashtra, Madhya Pradesh, Chattisgarh, Jarkhand and Bihar	6
	Unit 4: Traditional costume of Southern India Andhra and Telangana, Tamil Nadu, Kerala, Karnataka, Goa	6
	Unit 5: Traditional costume of Eastern India Orissa, West Bengal, Assam and other North Eastern states of India	6
	Unit 6: Traditional Handlooms, embroidery and printings of India: Handlooms : Traditional handloom sarees of India Regional embroidery techniques: Phulkari, Kantha, Chikankari, Zardozi, Kasuti Printing and dyeing techniques: Bandhani, Batik Kalamkari, Batik, Ajrakh, Madhubani	6
	Unit 7: Accessories & Ornaments in Traditional Attire Traditional headgear, footwear, and jewelry Significance of accessories in Indian customs and rituals	5
	Unit 8: Conservation and Sustainability in Traditional Costumes Importance of preserving traditional textiles and crafts Revival of handloom and traditional crafts in global markets Impact of fast fashion on Indian heritage textiles Government policies and initiatives for the promotion of handlooms and handicrafts	5
	Practical 1. Regional Costume Research & Presentation <ul style="list-style-type: none"> <li>Select a state or region and create a poster or slideshow showcasing its traditional attire, fabrics, and accessories.</li> <li>Include images, descriptions, and cultural significance.</li> </ul> 2. Fabric & Textile Identification <ul style="list-style-type: none"> <li>Collect fabric swatches (or use images) of Banarasi silk, Kanjeevaram, Bandhani, Chikankari, Pashmina, etc.</li> <li>Create a fabric catalog with details on weaving techniques, origin, and uses.</li> </ul> 3. Traditional vs. Modern Adaptation <ul style="list-style-type: none"> <li>Choose a traditional outfit (e.g., saree, lehenga, kurta-pajama) and research how it has evolved in modern fashion.</li> <li>Present a comparison chart with images of old and new versions.</li> </ul> 4. Draping Styles of India <ul style="list-style-type: none"> <li>Learn and practice 2-3 saree draping styles</li> <li>Capture photos/videos or sketch different draping techniques.</li> </ul>	30

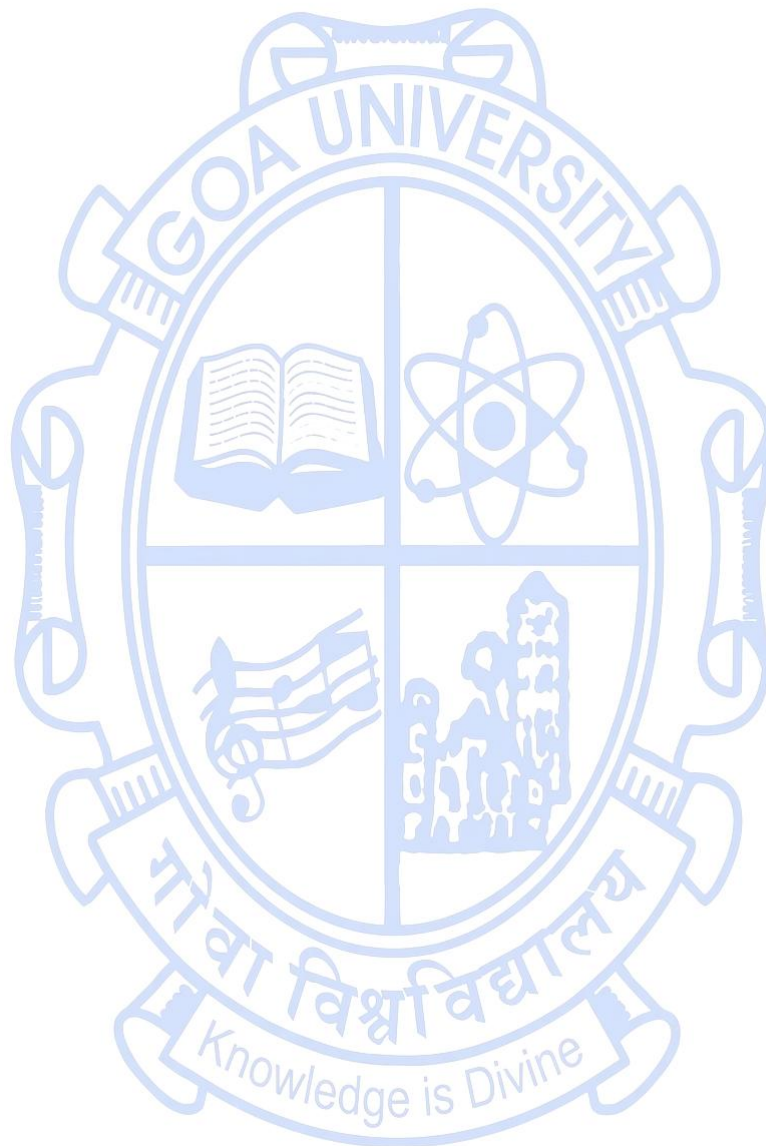
	<p>5. Accessories &amp; Jewelry Mapping</p> <ul style="list-style-type: none"> <li>• Create a visual guide or infographic showcasing traditional jewelry pieces like maang tikka, nath, kamarbandh, and payal.</li> <li>• Include which states/regions they belong to.</li> </ul> <p>6. Festival &amp; Wedding Attire Study</p> <ul style="list-style-type: none"> <li>• Choose a festival or wedding tradition and document the attire worn by different communities.</li> <li>• Present it in a photo collage or short write-up.</li> </ul> <p>7. Block Printing &amp; Embroidery Basics</p> <ul style="list-style-type: none"> <li>• Try a simple block printing and embroidery technique (e.g., Kantha, Phulkari, Chikankari) on a small fabric piece.</li> </ul> <p>8. Traditional Costume Sketching</p> <ul style="list-style-type: none"> <li>• Sketch or digitally illustrate a full traditional Indian outfit with fabric patterns and accessories.</li> <li>• Label each element and describe its cultural significance.</li> </ul>	
<b>Pedagogy:</b>	Regular lectures and practical ICT enabled learning experience	
<b>References/ Readings:</b>	<p>Text Books/ Reference Books:</p> <ol style="list-style-type: none"> <li>1. Bhatnagar P. (2004), Traditional Indian Costumes and Textiles, Abhshek Publications, New Delhi</li> <li>2. Chisti R. K., (2013) Sari tradition and beyond, Roli Publication</li> <li>3. Dawson, R. (1976). A Complete Guide to Embroidery. London &amp; New York: Marshall Cavendish Publishers.</li> <li>4. Gillow J &amp; Barnard N (2014), Indian Textiles, 1<sup>st</sup> Edition, A. PH publishing, New Delhi</li> <li>5. Ghurye G. S. (1995), Indian Costumes, Popular Prakashan, Bombay</li> <li>6. Irwin, J. H. &amp; Hall, M. (1973). Indian Embroideries. Ahmedabad: Historic Textiles of India at Calico Museum of Textiles.</li> <li>7. Karolia, A. (2019), Traditional India Handcrafted Textiles: Techniques, Processes and Designs Vol I and Vol II, Niyogi books, Delhi</li> <li>8. Pathak A, (2006), Indian Costumes, Roli Books, Mumbai</li> <li>9. Saraf, D. N. (1982). Indian Crafts. New Delhi: Vikas Publishing House Limited.</li> <li>10. Singh M. (2011) Traditional and Beyond Handcrafted Indian Textile, Roli Books Pvt. Ltd., New Delhi</li> </ol>	
<b>Course Outcome:</b>	<p>The student will be able to</p> <ol style="list-style-type: none"> <li>1. Recall the historical evolution of traditional costumes across different regions of India.</li> <li>2. Identify key textiles, embroidery techniques, and fabric types used in Indian traditional attire.</li> <li>3. Explain the cultural, geographical, and social factors influencing traditional costumes in different states.</li> <li>4. Describe the significance of various draping styles, accessories, and ornaments in Indian traditions.</li> <li>5. Classify different traditional costumes based on region, occasion, and social status.</li> <li>6. Demonstrate the ability to analyze the impact of textiles and embroidery techniques in modern fashion trends.</li> <li>7. Compare and contrast the regional variations of Indian traditional costumes.</li> <li>8. Assess the sustainability challenges faced by traditional textiles and handloom industries.</li> <li>9. Critically evaluate the efforts of government and NGOs in preserving Indian costume heritage.</li> <li>10. Design a modern fashion collection inspired by Indian traditional costumes and textiles.</li> <li>11. Propose innovative strategies for the revival and promotion of indigenous costume crafts.</li> </ol>	

**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HST-306  
**Title of the Course** : Apparel Marketing and Merchandising  
**Number of Credits** : 3T+1P  
**Effective from AY** : 2025-26

<b>Pre-requisites for the Course:</b>	SY BSc Home Science – Textiles and Fashion Studies	
<b>Course Objectives:</b>	1. To introduce students to the fundamentals of fashion marketing and merchandising. 2. To develop a critical understanding of consumer behavior and market research in the fashion industry. 3. To equip students with skills in merchandise planning, promotion, and retail operations. 4. To analyze emerging trends, technologies, and sustainable practices in apparel merchandising.	
		<b>No. of hours</b>
<b>Content</b>	<b>Unit 1: Fundamentals of Fashion Marketing and Merchandising</b> <ul style="list-style-type: none"> <li>• Key fashion business terminologies</li> <li>• Nature, scope, and importance of fashion marketing and merchandising</li> <li>• The marketing environment: macro and micro factors</li> </ul> Core areas in fashion marketing and merchandising: Public relations Brand management Event planning Customer relationship management Social media marketing Advertising Retail buying Store and visual merchandising Fashion buying Retail sales management <ul style="list-style-type: none"> <li>• Career profiles in fashion marketing and merchandising</li> </ul>	<b>9</b>
	<b>Unit 2: Fashion Market and Consumer Research</b> <ul style="list-style-type: none"> <li>• Understanding the fashion consumer and organizational buyers</li> <li>• Market segmentation and targeting strategies using the marketing mix (4Ps)</li> <li>• Fashion marketing research: methods to identify customer needs, preferences, and buying behavior</li> </ul>	<b>9</b>
	<b>Unit 3: Fashion Marketing Communication</b> <ul style="list-style-type: none"> <li>• Integrated marketing communication tools for fashion:               <ul style="list-style-type: none"> <li>○ Advertising</li> <li>○ Sales promotion</li> <li>○ Packaging</li> <li>○ Public relations and publicity</li> </ul> </li> <li>• Onsite promotion:               <ul style="list-style-type: none"> <li>○ Principles and strategies of visual merchandising</li> <li>○ Store layouts and window displays</li> </ul> </li> </ul>	<b>9</b>
	<b>Unit 4: Merchandise Management</b> <ul style="list-style-type: none"> <li>• Types of merchandise in the fashion industry</li> <li>• The six rights of merchandising and their role in business success</li> <li>• Merchandise life cycle: planning, acquisition, handling, and monitoring</li> <li>• Supply chain management in fashion retail</li> <li>• Inventory control techniques and systems</li> <li>• Basics of financial accounting for merchandise tracking and control</li> </ul>	<b>9</b>
	<b>Unit 5: Future Trends in Apparel Buying and Merchandising</b>	<b>9</b>

	<ul style="list-style-type: none"> <li>• The evolving role of Information Technology in fashion retail</li> <li>• Impact of new manufacturing techniques and sustainable innovations</li> <li>• Emerging roles of fashion buyers and merchandisers</li> <li>• Consumer behavior in the digital age</li> <li>• Competitive landscape in future fashion retail: omnichannel, fast fashion, niche markets</li> </ul>	
	<p><b>Practical</b></p> <ol style="list-style-type: none"> <li>1. Market analysis: Identify target markets and assess customer profiles and future sales trends</li> <li>2. Case study: Evaluate buying procedures in various fashion retail formats (department stores, boutiques, online platforms)</li> <li>3. Literature review and field visits: Explore emerging retail formats and consumer buying behavior</li> <li>4. Customer profiling: Use data analytics, warehousing, and mining to understand consumer segments and motives</li> <li>5. Mapping customer profiles for different fashion brands and businesses</li> <li>6. Analyze promotional campaigns and communication strategies of fashion brands</li> <li>7. Experiential project: Develop and promote a merchandise line for a selected fashion business</li> <li>8. Visual merchandising project: Plan and execute store displays for different retail formats</li> <li>9. Interaction with retail professionals: Understand best practices in merchandise planning and assortment strategies</li> <li>10. Market visits: Study various retail environments including local markets, malls, and online platforms</li> <li>11. Case study analysis: Examine supply chain management and inventory systems of a fashion business</li> </ol>	<b>30</b>
<b>Pedagogy:</b>	Regular lectures and practical ICT enabled learning experience	
<b>References/ Readings:</b>	<p>Text Books/ Reference Books:</p> <ol style="list-style-type: none"> <li>1. Bliss, L. L. (1995) Study Guide Visual Merchandising and Display 3rd ed. Fairchild Publications.</li> <li>2. Blythe, J. (2006), Principles and Practice of Marketing, Thomson, London.</li> <li>3. Easey M. ( 2009), Fashion Marketing, 3rd ed. United Kingdom: Blackwell Publishing</li> <li>4. Elaine, S. (2013) The Dynamics of Fashion. 4th ed. New York: Bloomsbury publication</li> <li>5. Kotler, P. and Gary, A. (2001) Principles of Marketing. 9th ed. Upper Saddle River, N.J.: Prentice Hall</li> <li>6. Wolfe, M. (2009) Fashion Marketing &amp; Merchandising, 3rd ed. United States: Goodheart-Willcox Publishing</li> </ol>	
<b>Course Outcomes:</b>	<p>The student will be able to</p> <ol style="list-style-type: none"> <li>1. Recall key fashion marketing and merchandising terminologies and concepts.</li> <li>2. Describe the scope, functions, and career opportunities in fashion marketing and merchandising.</li> <li>3. Explain the influence of macro and micro environmental factors on the fashion industry.</li> <li>4. Identify consumer behavior patterns and apply market segmentation techniques in fashion retail.</li> <li>5. Analyze the components of the marketing mix specific to fashion products.</li> <li>6. Apply promotional tools such as advertising, public relations, and visual merchandising in fashion marketing.</li> <li>7. Demonstrate knowledge of merchandise planning, acquisition, and inventory control techniques.</li> <li>8. Evaluate supply chain management practices in apparel merchandising.</li> </ol>	

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|  | <ol style="list-style-type: none"><li>9. Assess the impact of digital technologies and sustainability trends on fashion buying and retailing.</li><li>10. Design a comprehensive fashion marketing and merchandising project integrating real-world insights and strategies.</li></ol> |
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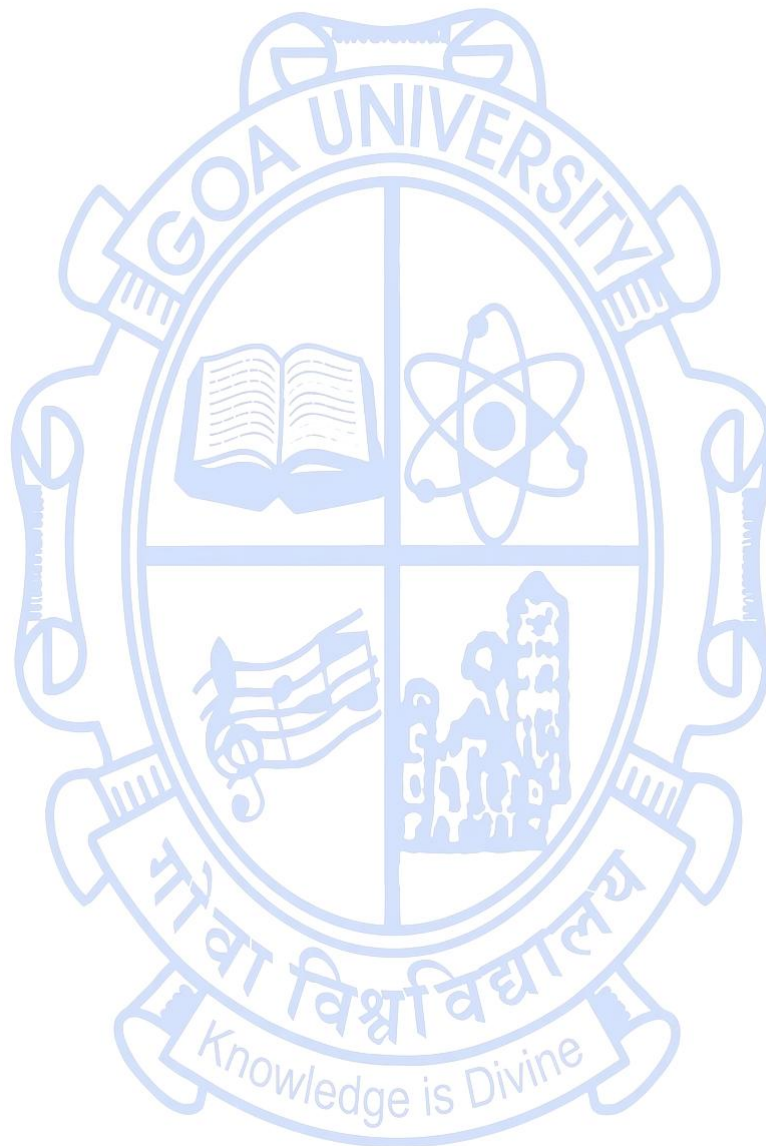


**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HST-322  
**Title of the Course** : Quality Norms and Standards for Apparel  
**Number of Credits** : 3T+1P  
**Effective from AY** : 2025-26

<b>Pre-requisites for the Course:</b>	SY BSc Home Science	
<b>Course Objectives:</b>	1. To facilitate the students for understanding the concept of apparel quality management systems and quality standards in textile industry. 2. The student will be able to set up quality control program for apparel production. 3. To know the importance of quality and eco – standard measures in textile industry	
<b>Content</b>		<b>No. of hours</b>
	<b>Unit I: Introduction to Quality Standards in Apparel</b> Definition and Importance of Quality in the Apparel Industry Key Quality Standards and Certifications: ISO 9000, ISO 14000 ASTM, AATCC, BIS (Bureau of Indian Standards) International Standards: British (BS), American (ANSI, AQL), European (CE) Total Quality Management (TQM) and its Application in Apparel Quality Control vs. Quality Assurance in Textile and Apparel	9
	<b>Unit II: Eco-Specifications and Environmental Standards</b> Eco-Labels and Certifications: OEKO-TEX, GOTS, Bluesign, Fair Trade Restricted Substances in Textiles: Azo Dyes, Heavy Metals, Pesticide Residues, Formaldehyde Impact of Chemicals in Dry Cleaning and Finishing Processes Sustainability and Green Manufacturing in Apparel Eco-Friendly Fabrics & Alternatives (Organic Cotton, Recycled Fibers, Natural Dyes)	9
	<b>Unit III: Apparel Defects and Quality Evaluation</b> Common Defects in Apparel Manufacturing: Cutting: Grain distortion, Pattern Misalignment Sewing: Seam Slippage, Puckering, Uneven Stitching Finishing: Stains, Incorrect Labeling, Poor Packaging Inspection Methods and Standards: Inline and Final Inspection Acceptance Quality Limit (AQL) Sampling Methods Testing for Apparel Performance: Fabric Strength, Colour Fastness, Seam Durability, Shrinkage Tests	9
	<b>Unit IV: Garment Testing and Care Labeling</b> Physical and Chemical Testing of Fabrics & Garments: Strength and Abrasion Tests Stain Release and Soil Resistance Tests Care Labeling Standards: International Labeling Systems (ISO, ASTM, AATCC) Washing, Dry Cleaning, and Ironing Symbols Impact of Fabric Finishes on Quality: Softening Agents, Water-Repellent and Fire-Retardant Finishes	9
	<b>Unit V: Quality Costs, Customer Satisfaction &amp; Industry Compliance</b> Cost of Quality (COQ): Prevention, Appraisal, and Failure Costs Customer Expectations & Handling Quality Complaints Legal and Ethical Aspects of Apparel Quality Packaging and Labeling Regulations (Trade Laws)	9

	<p>Compliance with National and International Trade Regulations Industry Best Practices for Apparel Quality Management</p> <p>PRACTICAL</p> <p>1. Identification of Quality Standards Study and compare ISO 9000 &amp; ISO 14000 standards with other international quality norms. Case study on Total Quality Management (TQM) in the apparel industry.</p> <p>2. Garment Defect Analysis Identify and classify common defects in the cutting, sewing, finishing, and packing departments. Assess fabric grain distortion, bowing, and skewness in woven and knitted fabrics.</p> <p>3. Testing of Seam Strength and Seam Properties Perform seam strength tests on woven and knitted fabrics. Assess seam properties such as elasticity, puckering, and slippage resistance.</p> <p>3. Soil and Stain Release Testing Conduct stain removal efficiency tests using different washing and dry-cleaning techniques. Evaluate the impact of fabric finishes on stain release performance.</p> <p>4. Care Labeling and Eco-Labeling Study Identify and analyze different care label symbols Compare different eco-labels</p> <p>5. Fabric Colour Fastness Testing Perform tests for wash fastness, rub fastness, and light fastness. Assess the effect of optical brighteners and softening agents on fabric durability.</p> <p>6. Field Visit &amp; Report on Apparel Quality Control Visit a garment manufacturing/export unit to study quality control practices. Prepare a report on inspection, testing, and quality assurance methods.</p>	<b>30</b>
<b>Pedagogy:</b>	Regular lectures and practical ICT enabled learning experience	
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Gupta, R. (2020). <i>Quality management in the textile industry: Practices and innovations in India</i>. New Delhi: ABC Publishers.</li> <li>2. Jain, K. C. (2003). <i>Quality assurance and total quality management (ISO-9000, QS-9000, ISO-14000)</i> (3rd ed.). Khanna Publishers.</li> <li>3. Sharma, P., &amp; Mehta, S. (2018). <i>Sustainable practices in the Indian apparel sector: Quality and compliance</i>. Mumbai: Fashion Books India.</li> <li>4. Rao, A. (2021). <i>Textile quality assurance: Standards and testing methods</i>. Chennai: Textile Institute Press.</li> <li>5. Singh, M. (2019). <i>Quality control in garment manufacturing: An Indian perspective</i>. Kolkata: Garment Industry Publications.</li> <li>6. Verma, T., &amp; Nair, R. (2022). <i>Global standards in apparel: A comprehensive guide for Indian manufacturers</i>. Bengaluru: Fashion Science Publishers.</li> </ol>	
<b>Course Outcome:</b>	<p>A successful completion of this course will enable students to</p> <ol style="list-style-type: none"> <li>1. Define key quality concepts, standards, and certifications used in the apparel industry.</li> <li>2. Describe various eco-specifications, restricted substances, and sustainable practices in textile production.</li> <li>3. Explain different apparel defects, their causes, and methods for quality evaluation.</li> <li>4. Classify various fabric and garment testing methods based on physical and chemical properties.</li> <li>5. Analyze the impact of finishing treatments and environmental factors on garment quality.</li> <li>6. Evaluate different inspection methods, AQL sampling techniques, and garment performance tests.</li> <li>7. Interpret care labeling symbols and regulations for national and international markets.</li> </ol>	

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|  | <ol style="list-style-type: none"><li>8. Assess the cost implications of poor quality and the role of Total Quality Management (TQM).</li><li>9. Develop strategies to improve quality control and sustainability in apparel manufacturing.</li><li>10. Design an effective quality assurance plan for apparel production, ensuring compliance with global standards.</li></ol> |
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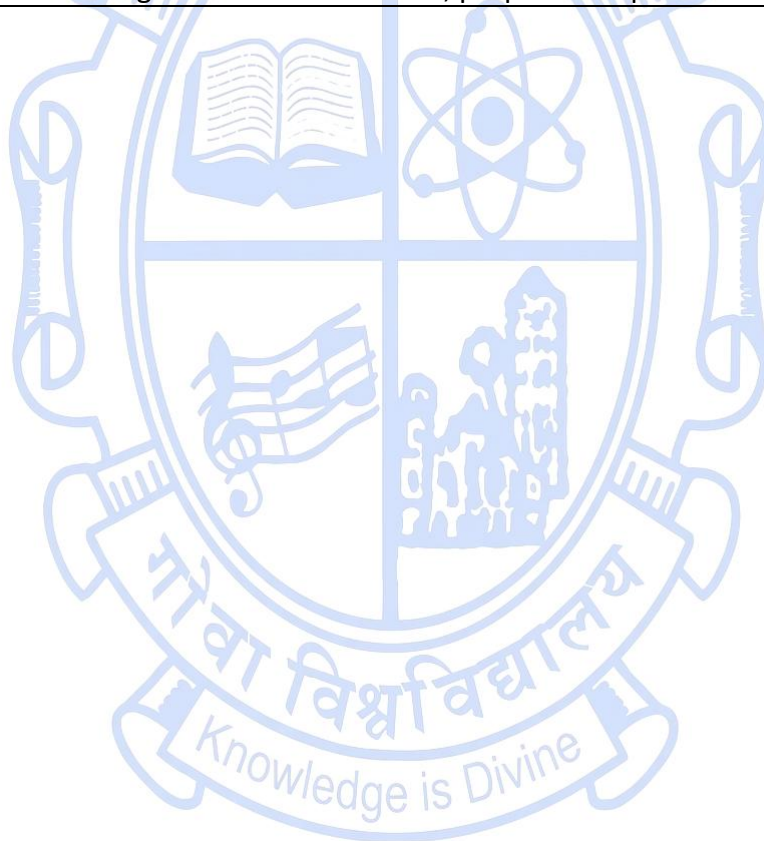
**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HST-401  
**Title of the Course** : Advance Pattern Making  
**Number of Credits** : 0+4 (0 theory+ 4 Practical)  
**Effective from AY** : 2023-24

<b>Pre-requisites for the Course:</b>	TY BSc- Home Science- Textiles and Fashion studies	
<b>Course Objectives:</b>	1. Develop advanced drafting skills for various garment components. 2. Draft patterns for six distinct garments, demonstrating versatility. 3. Enable students to create customized garments from design concepts.	
<b>Practical</b>	<b>Content</b>	<b>No. of lecture</b>
<b>Unit 1</b>	Advanced drafts of Bodice Skirts Sleeves Collars Necklines Yoke	<b>60</b>
<b>Unit 2</b>	Drafts of six garments Skirt Ladies shirt/choli Formal dress (western & ethnic) Ladies pants Kalidar kurta	<b>60</b>
<b>Pedagogy:</b>	Regular lectures and practical ICT enabled learning experience	
<b>References/ Readings:</b>	Text Books/ Reference Books: 1. Kiisel K. (2013), Draping: The Complete Course, Laurence King Publishing. 2. Armstrong, H.J. (2009), Pattern Making for Fashion Design, Harper Collins Publishers, INC, New York.	
<b>Course Outcome:</b>	A successful completion of this course will enable students to 1. Proficiency in advanced pattern drafting for diverse garment elements. 2. Mastery in drafting six different garments, showcasing versatile skills. 3. Ability to translate design concepts into wearable fashion pieces.	

**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HST-402  
**Title of the Course** : Textile Industry and Trade  
**Number of Credits** : 3+1 (3 theory+ 1 Practical)  
**Effective from AY** : 2026-27

<b>Pre-requisites for the Course:</b>	TY BSc- Home Science- Textiles and Fashion studies	
<b>Course Objectives:</b>	1. To know India's growth and development in textile industry. 2. To analyze the percentage growth rate in textile industry. 3. Introduction to export trade	
<b>Theory</b>	<b>Content</b>	<b>No. of Hours</b>
<b>Unit 1</b>	<b>Origin, Growth and Development of Indian Textile Industry</b> Cotton, Wool, Silk, Rayon, Man-Made Textiles, Readymade garments . Five year plans for the textile Industry ,Recent plan and previous 5 Five year plans, Organizations related to the Textile and clothing Industry Concept of GATT, MFA, WTO, AIC, Globalization.	<b>10</b>
<b>Unit 2</b>	<b>Technological developments in Fiber Industry</b> , Significance and uses Technological developments in Yarn Industry, significance and uses. Technological developments in Fabric Industry , woven, significance and uses. Technological developments in Fabric Industry , knitting, significance and uses. Technological developments in Garment Industry, significance and uses. Technological developments in Processing Industry, significance and uses. Printing and dyeing industry.	<b>10</b>
<b>Unit 3</b>	<b>BUSINESS:</b> Industry ,trade, commerce, common features of business enterprise, ownership type etc Organizations: Principles of formation, forms of business, proprietorship, partnership, and public / private limited company. Export firm: Nature of export firm, setting up of an export firm, export licensing, and registration formalities - registrations with RBI, EPC, DGFT, commodity boards; income tax and customs authorities. Quota system and its phase out. Textile EXIM Policies - AEPC and Textile Committee, Special schemes for import and duty drawback for garments. Garment Export Entitlement Policy, Documentation - Packaging - Import fairs and Exhibitions.	<b>15</b>
<b>Unit 4</b>	<b>Introduction to export trade:</b> Nature and scope of export trade, factors influencing export trade, benefits and problems in international trade. Documentation - Principal documents, Auxiliary documents, documents for claiming export assistance Export documentation - Introduction, Objectives and terminologies, Global & Indian Current scenario of apparel industry, Role of Govt. in export promotion. International trade-export	<b>10</b>
<b>Practical</b>	Textile Production Facility Visits: Organize visits/film show to textile production facilities such as mills, weaving factories, dyeing units, and garment manufacturing units. Market Research and Trend Analysis: Assign projects that require students to conduct market research and trend analysis in the textile industry. Textile Design Workshops: Arrange textile design workshops where students can experiment with different design techniques, printing methods, and surface embellishments International Trade Simulation: Conduct a simulation exercise on international trade in textiles, where students represent different countries or trade organizations. Field Trips to Textile Trade Shows and Exhibitions: Organize field trips to textile trade shows, exhibitions, and industry events where students can interact with industry professionals.	<b>30</b>

	Industry Guest Lectures: Invite guest speakers from the textile industry to share their experiences, insights, and expertise	
<b>Pedagogy:</b>	Regular lectures and practical ICT enabled learning experience	
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Bernard P Corbman(1985) Textiles - Fiber to fabric, , 6th edition. Me Graw Hill Book Co, Singapore</li> <li>2. Peter S, Trevor R, Mansour M(1996) Fabric forming systems, Noyes Publications, New Jersey, USA</li> <li>3. Normia D'Souza( Fabric Care, , New Age International Pvt Ltd, New Delhi .</li> <li>4. Ruddar Datt, KPM Sundharam,(2006) Indian Economy P:558, S. Chand &amp; Company Ltd, New Delhi,.</li> <li>5. S. K. Misra &amp; V. K. Puri,(2006) Indian Economy P.450, Himalaya Publishing House, Delhi.</li> <li>6. Francis C(2208), Industrial Economies, Indian Perspective, Himalaya Publishing House, Delhi.</li> </ol>	
<b>Outcome:</b>	<p>A successful completion of this course will enable students to</p> <ol style="list-style-type: none"> <li>1. Understand Growth and Development of Indian Textile Industry</li> <li>2. Gain insight into Technological developments in Fiber, fabric and garment Industry</li> <li>3. Understand the nature and scope of export trade, factors influencing export trade</li> <li>4. Gain knowledge on forms of business, proprietorship</li> </ol>	



Name of the Programme : B.Sc. Home Science - Textiles and Fashion studies  
 Course Code : HST-403  
 Title of the Course : Fiber Chemistry  
 Number of Credits : 3+1 (3 theory+ 1 Practical)  
 Effective from AY : 2023-24

<b>Pre-requisites for the Course:</b>	TY BSc- Home Science- Textiles and Fashion studies	
<b>Course Objectives:</b>	<ol style="list-style-type: none"> <li>1. To learn fiber and polymer classification and manufacturing methods.</li> <li>2. To explore synthetic fiber production techniques.</li> <li>3. To understand natural and regenerated fiber properties.</li> <li>4. To identify synthetic fiber properties and manufacturing processes.</li> </ol>	
<b>Theory</b>	<b>Content</b>	<b>No. of Hours</b>
<b>Unit 1</b>	<b>Introduction of Textile Fibres &amp; Polymers And Their Classification</b> <ul style="list-style-type: none"> <li>• Fibers -Definition, Classification on fibers, important characteristics of Textile fibers</li> <li>• Classification of polymer - Homo polymer, Co-Polymer, Atactic, Syndiotactic and isotactic polymer, branch &amp; linear polymer.</li> <li>• Types of polymerization addition and condensation, orientation.</li> <li>• Fiber structure, Concept of Crystallinity, Amorphous region, Glass transition temperature and melting point.</li> </ul>	<b>9</b>
<b>Unit 2</b>	<b>Manufacturing Process of Synthetic Fibres And Texturizing</b> <ul style="list-style-type: none"> <li>• Techniques of Spinning of manmade fibers: Wet Spinning, Dry Spinning&amp; Melt Spinning.</li> <li>• Application of Spin Finish.</li> <li>• Texturizing, Importance of Texturizing process, Types of texturizing process.</li> </ul>	<b>9</b>
<b>Unit 3</b>	<b>Structure and Properties of Natural Fibres</b> <ul style="list-style-type: none"> <li>• Structure, Physical &amp; Chemical properties of Cotton, Wool and Silk.</li> <li>• Formation of hydro and oxy cellulose.</li> <li>• Concept of Zwitter ion &amp; Isoelectric region in Protein Fibres.</li> </ul>	<b>9</b>
<b>Unit 4</b>	<b>Manufacturing Process of Regenerated &amp; Polyester Fibres with Their Properties</b> <ul style="list-style-type: none"> <li>• Manufacturing process of viscose fiber, Cellulose acetate, Lyocell</li> <li>• Physical and Chemical properties of Viscose, cellulose acetate and Lyocell.</li> <li>• Manufacturing process of polyester fiber, Physical and chemical properties of polyester fiber.</li> <li>• Concept of heat setting.</li> </ul>	<b>9</b>
<b>Unit 5</b>	<b>Manufacturing Process of Polyamides, Poly Acrylonitrile and Other Fibres with Their Properties</b> <ul style="list-style-type: none"> <li>• Manufacturing process of Nylon-6 &amp; Nylon-6, 6. Physical and Chemical properties of Polyamide fibers.</li> <li>• Manufacturing process of Acrylonitrile fibers. Physical and Chemical properties of Acrylonitrile fiber.</li> <li>• Manufacturing process of PE &amp;PP fibers. Physical and Chemical properties of PE &amp; PP fibers.</li> </ul>	<b>9</b>
<b>Practical</b>	<b>Fibre identification-</b> Morphology and characteristics, key properties <b>Polymerization techniques demonstration-</b> understand polymer structures and methods <b>Spinning Techniques Workshop-</b> Hands-on experience with spinning methods <b>Texturizing Process Experiment-</b> Texturizing techniques <b>Natural Fiber Properties Analysis-</b> Analyze cotton, wool, and silk fibers. Test physical and chemical properties	<b>30</b>
<b>Pedagogy:</b>	Regular lectures and practical	

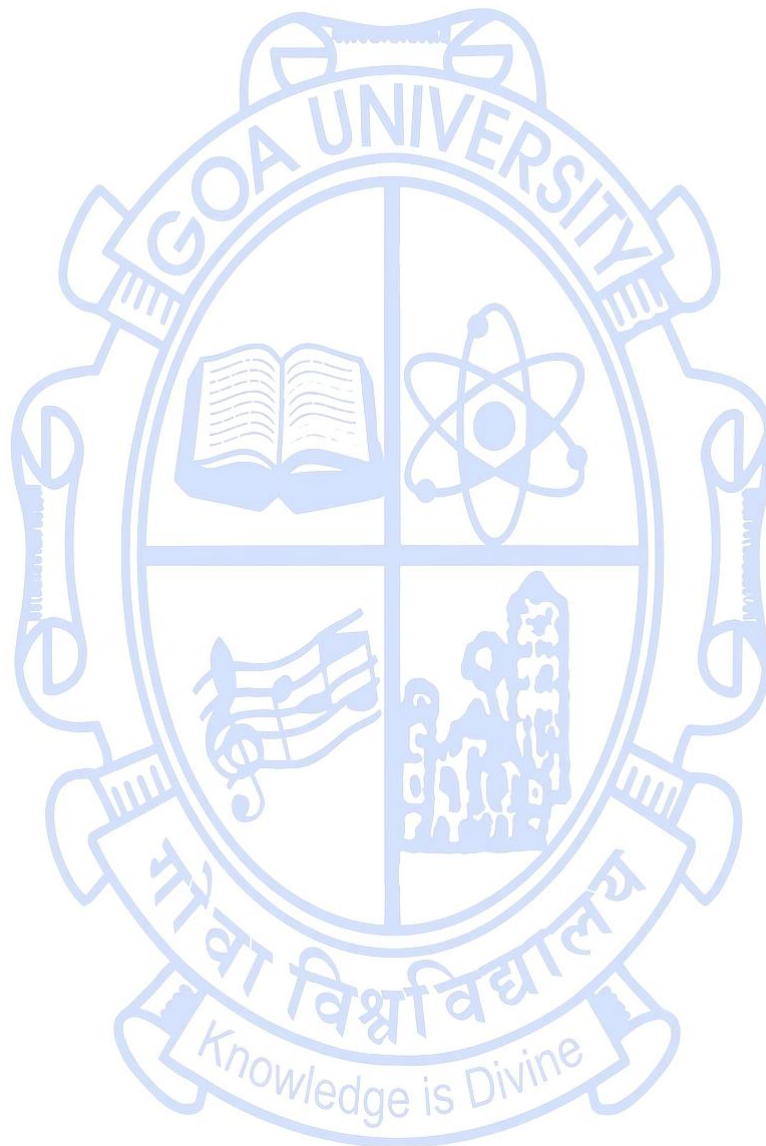
	ICT enabled learning experience
<b>References/ Readings:</b>	<p>Text Books/ Reference Books:</p> <ol style="list-style-type: none"> <li>1. Ahmad, S., Rasheed, A., &amp; Nawab, Y. (Eds.). (2020). <i>Fibers for technical textiles</i>. Springer.</li> <li>2. Cook, G. J. (1984). <i>Handbook of textile fibres</i> (Vols. 1–2). Woodhead Fibre Science Series.</li> <li>3. Deopura, B. L., &amp; Gupta, B. (n.d.). <i>Man-made fibres</i>.</li> <li>4. Gowariker, V. R., Viswanathan, N. V., &amp; Sridhar, J. (1996). <i>Polymer science</i>. New Age International.</li> <li>5. Greaves, P. H., &amp; Saville, B. P. (2020). <i>Microscopy of textile fibres</i>. Garland Science.</li> <li>6. Gupta, V. B., &amp; Kothari, V. K. (1997). <i>Manufactured fibre technology</i>. Springer Netherlands.</li> <li>7. Hu, J., Kumar, B., &amp; Lu, J. (Eds.). (2020). <i>Handbook of fibrous materials</i> (Vols. 1–2). Wiley-VCH.</li> <li>8. Khan, A., Rangappa, S. M., Siengchin, S., &amp; Asiri, A. M. (Eds.). (2020). <i>Biofibers and biopolymers for biocomposites: Synthesis, characterization and properties</i>. Springer.</li> <li>9. Lewin, M., &amp; Pearce, E. M. (1998). <i>Handbook of fibre chemistry</i> (2nd ed.). Marcel Dekker.</li> <li>10. Mishra, S. P. (1998). <i>Fibre science and technology</i>. New Age International.</li> <li>11. Moncrieff, R. W. (1975). <i>Man-made fibres</i> (6th ed.). Newnes-Butterworths.</li> <li>12. Sadov, F. I., Korchagin, M. V., &amp; Matetsky, A. I. (1973). <i>Chemical technology of fibrous materials</i>. Mir Publishers.</li> <li>13. Shahid, M., &amp; Adivarekar, R. (Eds.). (2020). <i>Advances in functional finishing of textiles</i>. Springer.</li> <li>14. Shenai, V. A. (n.d.). <i>Textile fibres</i>. Sevak Publications.</li> <li>15. Vaidya, A. A. (1988). <i>Production of synthetic fibres</i>. Prentice Hall of India.</li> <li>16. Wang, H., &amp; Memon, H. (Eds.). (2020). <i>Cotton science and processing technology: Gene, ginning, garment and green recycling</i>. Springer.</li> </ol>
<b>Outcome:</b>	<p>A successful completion of this course will enable students to</p> <ol style="list-style-type: none"> <li>1. Advance knowledge of fiber and polymer classification and manufacturing.</li> <li>2. Understand synthetic fiber production techniques and applications.</li> <li>3. Learn about natural and regenerated fiber properties.</li> <li>4. Acquire understanding of synthetic fiber properties and production methods.</li> </ol>

**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HST-404  
**Title of the Course** : Recent Advancement in Textile, Clothing and Fashion  
**Number of Credits** : 4T  
**Effective from AY** : 2026- 2027

<b>Pre-requisites for the Course:</b>	TY BSc- Home Science- Textiles and Fashion studies	
<b>Course Objectives:</b>	1. To explore recent advancements in textiles, clothing, and fashion. 2. To understand key concepts in textile chemistry and processing. 3. To examine eco-friendly processing techniques and digital design tools in fashion. 4. To analyze the impact of advancements on the textile industry.	
<b>Theory</b>	<b>Content</b>	<b>No. of Hours</b>
<b>Unit 1</b>	<b>Introduction to Recent Advancements in Textiles, Clothing and Fashion</b> <ul style="list-style-type: none"> <li>• Emerging Trends in the Textile and Fashion Industry</li> <li>• Overview of recent developments in textiles, clothing, and fashion</li> <li>• Impact of globalization and technology on the textile and apparel sector</li> <li>• Changing consumer preferences and market trends</li> <li>• Sustainable and ethical fashion movements</li> <li>• Innovation and Entrepreneurship in Fashion</li> <li>• Innovation-driven growth in the textile and fashion industry</li> <li>• Case studies of successful innovations, brands, and start-ups</li> <li>• Future directions in textiles, clothing, and fashion</li> </ul>	<b>12</b>
<b>Unit 2</b>	<b>Recent Advances in Fibres, Yarns and Fabrics</b> <ul style="list-style-type: none"> <li>• Advances in Fibre Technology</li> <li>• High-performance and specialty fibres</li> <li>• Smart fibres and functional fibres</li> <li>• Bio-based and regenerated fibres</li> <li>• Recycled and sustainable fibres</li> <li>• Advances in Yarn Technology</li> <li>• Innovative spinning techniques</li> <li>• Blended and engineered yarns</li> <li>• Functional and technical yarns</li> <li>• Advances in Fabric Development</li> <li>• Nonwoven fabrics and their applications</li> <li>• Smart and intelligent textiles</li> <li>• Performance fabrics for sports, healthcare, and protective clothing</li> <li>• Nanotechnology in textile materials</li> </ul>	<b>12</b>
<b>Unit 3</b>	<b>Recent Advances in Detergency and Colouration</b> <ul style="list-style-type: none"> <li>• Advances in Detergency</li> <li>• Modern detergents and eco-friendly cleaning agents</li> <li>• Enzyme-based detergents</li> <li>• Innovations in textile care and maintenance</li> <li>• Sustainable laundering technologies</li> <li>• Advances in Colouration</li> <li>• Modern dyeing and printing technologies</li> <li>• Digital textile printing</li> <li>• Natural dyes and eco-friendly colouration methods</li> <li>• Low-water and waterless dyeing technologies</li> <li>• Functional finishes and colour-fastness enhancement techniques</li> </ul>	<b>12</b>
<b>Unit 4</b>	<b>Technological Advancements in Textiles and Clothing</b>	<b>12</b>

	<ul style="list-style-type: none"> <li>• Advanced Textile Technologies</li> <li>• Technical textiles and their applications</li> <li>• Medical, geotechnical, agro, and protective textiles</li> <li>• Wearable technology and smart garments</li> <li>• 3D printing in textiles and apparel</li> <li>• Sustainable and Eco-Friendly Textiles</li> <li>• Green manufacturing processes</li> <li>• Circular fashion and textile recycling</li> <li>• Sustainable production and consumption practices</li> <li>• Certifications and standards for sustainable textiles</li> <li>• Innovations in Clothing Production</li> <li>• Automated cutting and sewing technologies</li> <li>• Mass customization and on-demand production</li> <li>• Industry 4.0 and automation in apparel manufacturing</li> </ul>	
<b>Unit 5</b>	<p><b>Unit 5: Recent Advances in Digital Design Tools and Fashion Technology</b></p> <ul style="list-style-type: none"> <li>• Digital Design Technologies</li> <li>• Computer-Aided Design (CAD) in fashion and textiles</li> <li>• Digital pattern making and grading</li> <li>• 3D garment visualization and virtual prototyping</li> <li>• Fashion Technology Applications</li> <li>• Artificial Intelligence (AI) and Machine Learning in fashion</li> <li>• Virtual and Augmented Reality in fashion retail</li> <li>• Fashion forecasting and trend analysis software</li> <li>• Digital product development and virtual sampling</li> <li>• E-Commerce and Digital Fashion</li> <li>• Online fashion platforms and digital marketing</li> <li>• Virtual fashion shows and digital fashion collections</li> <li>• Digital avatars and metaverse fashion</li> <li>• Role of digital tools in improving design efficiency and creativity</li> </ul>	<b>12</b>
<b>Pedagogy:</b>	Regular lectures and practical ICT enabled learning experience	
<b>References/ Readings:</b>	<p>Text Books/ Reference Books:</p> <ol style="list-style-type: none"> <li>1. Muthu, S. S., &amp; Gardetti, M. A. (Eds.). (2021). <i>Sustainable design in textiles and fashion</i>. Springer.</li> <li>2. Muthu, S. S. (Ed.). (2022). <i>Sustainable approaches in textiles and fashion: Consumerism, global textiles and supply chain</i>. Springer.</li> <li>3. Muthu, S. S. (Ed.). (2022). <i>Blockchain technologies in the textile and fashion industry</i>. Springer.</li> <li>4. Muthu, S. S. (Ed.). (2023). <i>Novel sustainable alternative approaches for the textiles and fashion industry</i>. Springer.</li> <li>5. Payne, A. (2021). <i>Designing fashion's future: Present practice and tactics for sustainable change</i>. Bloomsbury Visual Arts.</li> <li>6. Marcketti, S. B., &amp; Kadolph, S. J. (2023). <i>Textiles</i> (14th ed.). Pearson.</li> <li>7. Gwilt, A. (2020). <i>A practical guide to sustainable fashion</i> (2nd ed.). Bloomsbury Visual Arts.</li> <li>8. Fletcher, K., &amp; Grose, L. (2023). <i>Fashion and sustainability: Design for change</i> (2nd ed.). Laurence King Publishing.</li> <li>9. Nayak, R., &amp; Padhye, R. (2022). <i>Garment manufacturing technology</i> (2nd ed.). Woodhead Publishing.</li> <li>10. Matthes, A., Beyer, K., Cebulla, H., Arnold, M. G., &amp; Schumann, A. (Eds.). (2020). <i>Sustainable textile and fashion value chains: Drivers, concepts, theories and solutions</i>. Springer.</li> </ol>	

<b>Outcome:</b>	<p>A successful completion of this course will enable students to</p> <ol style="list-style-type: none"><li>1. Explain recent technological advancements and emerging trends in textiles, clothing, and fashion industries.</li><li>2. Examine innovations in fibres, yarns, fabrics, detergency, colouration, and textile finishing technologies.</li><li>3. Analyze the applications of smart textiles, technical textiles, sustainable materials, and eco-friendly production practices in the textile and apparel sector.</li><li>4. Apply digital tools and technologies for fashion design, product development, visualization, and merchandising.</li><li>5. Evaluate the impact of technological innovations, sustainability initiatives, and digital transformation on the future of textiles, clothing, and fashion industries.</li></ol>
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**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HST 405  
**Title of the Course** : Fashion Journalism  
**Number of Credits** : 2+2 (2 theory+ 2 Practical)  
**Effective from AY** : 2023-24

<b>Pre-requisites for the Course:</b>	TY BSc- Home Science- Textiles and Fashion studies	
<b>Course Objectives:</b>	<ul style="list-style-type: none"> <li>Understand the role of fashion journalism in shaping cultural narratives and consumer behavior.</li> <li>Analyze fashion trends, designers, brands, and industry developments critically.</li> </ul>	
<b>Content:</b>		<b>No. of Hours</b>
	<b>Unit I</b> Introduction to Fashion Journalism and Fashion Industry Overview Overview of fashion journalism: history, trends, and key concepts Role of the fashion journalist in the media landscape Ethics and responsibilities in fashion journalism Understanding the fashion industry: designers, brands, retailers, and influencers Analysis of fashion cycles, seasons, and trends Fashion business and economic considerations	<b>5</b>
	<b>Unit II</b> Fashion Reporting ,Fashion Feature Writing and Fashion Criticism Principles of fashion reporting: news value, sources, and interviews Writing concise and informative fashion news articles Crafting compelling feature stories: profiles, trend pieces, and investigative articles Developing narrative techniques and storytelling in fashion journalism Understanding the role of the fashion critic: evaluation, analysis, and critique Elements of effective fashion criticism: aesthetics, craftsmanship, cultural context	<b>5</b>
	<b>Unit III</b> Fashion Photography and Visual Storytelling Role of photography and visuals in fashion journalism Principles of fashion photography and styling Collaborating with photographers, stylists, and other creatives	<b>5</b>
	<b>Unit IV</b> Multimedia Platforms, Blogging and Personal Branding in Fashion Journalism Exploring digital platforms, social media, and online publications Developing multimedia storytelling skills: video content, podcasts, and interactive features Overview of fashion blogging: history, evolution, and impact Building a personal brand as a fashion journalist Ethics and authenticity in fashion blogging and influencer culture.	<b>5</b>
	<b>Unit V</b> Fashion Publishing and Media Relations Role of fashion editors and publications: magazines, websites, and digital platforms Principles of fashion editing: content curation, layout, and design Pitching and publishing fashion stories Understanding the relationship between fashion journalists and PR professionals Navigating press releases, media kits, and fashion events Maintaining professional relationships and ethical standards	<b>5</b>
	<b>Unit VI</b> Fashion Journalism Ethics and Diversity	<b>5</b>

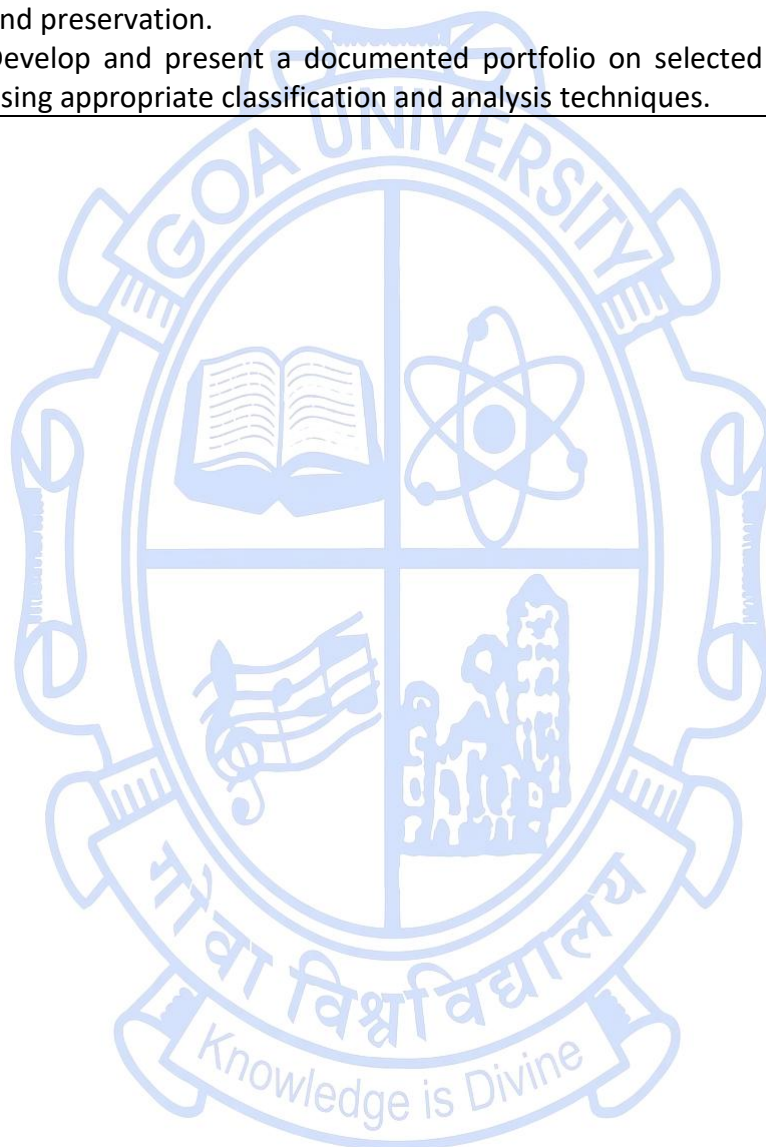
	Ethics in fashion journalism: transparency, objectivity, and conflicts of interest Representation and diversity in fashion media Responsible reporting on social and cultural issues in fashion	
<b>Practical</b>	<p>Fashion Reporting Assignments:</p> <ol style="list-style-type: none"> <li>1. These may include covering fashion events, interviewing designers or industry professionals, and writing news articles on current trends and developments in the fashion industry.</li> <li>2. Feature Writing Projects: craft feature stories on various fashion-related topics. fashion trends, personalities, or issues within the industry.</li> <li>3. Fashion Critique and Review Exercises: practice writing fashion critiques and reviews of collections, fashion shows, exhibitions, or retail experiences.</li> <li>4. Multimedia Storytelling Projects: Create video interviews with fashion professionals, produce podcasts discussing fashion topics, or develop interactive features for online platforms.</li> <li>5. Fashion Blogging or Social Media Campaign: Experiment with fashion blogging or social media content creation. They may develop their own fashion blog or create content for social media platforms, focusing on topics such as fashion trends, style inspiration, or behind-the-scenes insights into the fashion industry.</li> <li>6. Fashion Event Coverage: Students will attend and report on fashion events such as runway shows, exhibitions, or industry conferences.</li> <li>7. Portfolio Development: Throughout the semester, students will compile their best work into a professional portfolio showcasing their skills and accomplishments in fashion journalism.</li> </ol>	<b>60</b>
<b>Pedagogy:</b>	Regular lectures and practical ICT enabled learning experience	
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Jayakrishnan, M. S. (2010). <i>Fashion journalism</i>. New Age International Pvt. Ltd.</li> <li>2. Kulkarni, R. (2019). <i>Fashion journalism in India</i>. Himalaya Publishing House.</li> <li>3. Madhukalya, A. (2020). <i>Fashion journalism: A practical guide</i>. Notion Press.</li> <li>4. Sudha, K. V. (2021). <i>Fashion journalism: Ethnographic study of Indian fashion bloggers</i>. Independently Published.</li> <li>5. Chanda, R. (2009). <i>Fashion journalism: An overview</i>. Mittal Publications.</li> </ol>	
<b>Outcome:</b>	<p>A successful completion of this course will enable students to</p> <ol style="list-style-type: none"> <li>1. Develop proficiency in various forms of fashion writing, including reporting, feature writing, and criticism.</li> <li>2. Explore multimedia platforms relevant to fashion journalism.</li> <li>3. Cultivate research skills and ethical practices in fashion journalism.</li> <li>4. Develop a portfolio of fashion journalism pieces demonstrating creativity, critical thinking, and professional standards.</li> </ol>	

**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HST-406  
**Title of the Course** : World Historic Textiles  
**Number of Credits** : 3+1 (3 theory+ 1 Practical)  
**Effective from AY** : 2026-27

<b>Pre-requisites for the Course:</b>	TY BSc- Home Science- Textiles and Fashion studies	
<b>Course Objectives:</b>	<ol style="list-style-type: none"> <li>1. To introduce students to the history and evolution of textiles across major world civilizations.</li> <li>2. To examine the characteristics, techniques, motifs, and cultural significance of historic textiles.</li> <li>3. To understand the factors affecting the deterioration of textiles and the principles of textile conservation.</li> <li>4. To develop knowledge of textile care, preservation, and documentation practices.</li> <li>5. To foster appreciation of global textile heritage through portfolio development and analysis.</li> </ol>	
<b>Theory</b>	<b>Content</b>	<b>No. of lecture</b>
<b>Unit 1</b>	<b>Introduction to Historic Textiles and Textile Conservation</b> <b>Historic Textiles</b> <ul style="list-style-type: none"> <li>• Importance and scope of historic textiles</li> <li>• Textiles as cultural and historical records</li> <li>• Evolution of textile production and trade</li> </ul> <b>Care and Preservation of Textiles</b> <ul style="list-style-type: none"> <li>• Factors affecting textile deterioration</li> <li>• Principles of textile conservation and preservation</li> <li>• Methods of storage, handling, display, and maintenance of historic textiles</li> </ul>	<b>9</b>
<b>Unit 2</b>	<b>Unit 2: Textiles of the Ancient World</b> <b>Mediterranean Civilizations</b> <ul style="list-style-type: none"> <li>• Egyptian textiles</li> <li>• Greek textiles</li> <li>• Roman textiles</li> </ul> <b>European Textile Traditions</b> <ul style="list-style-type: none"> <li>• Textiles of Central and Northern Europe</li> <li>• Early weaving, dyeing, and decorative techniques</li> </ul>	<b>9</b>
<b>Unit 3</b>	<b>Unit 3: Textiles of Europe</b> <b>Western European Textiles</b> <ul style="list-style-type: none"> <li>• Italian silks and velvets</li> <li>• Spanish textiles and embroidery</li> <li>• French silks, lace, and tapestry traditions</li> </ul> <b>English Textiles</b> <ul style="list-style-type: none"> <li>• Development of English textile traditions</li> <li>• Influence of the Industrial Revolution on textile production</li> </ul>	<b>9</b>
<b>Unit 4</b>	<b>Unit 4: Textiles of Asia and the Middle East</b> <b>Near and Middle Eastern Textiles</b> <ul style="list-style-type: none"> <li>• Sassanian textiles</li> <li>• Early Islamic textiles</li> <li>• Byzantine silks</li> <li>• Central Asian textile traditions</li> </ul> <b>Far Eastern Textiles</b> <ul style="list-style-type: none"> <li>• Chinese silk traditions and decorative arts</li> <li>• Japanese textiles, weaving, dyeing, and embroidery techniques</li> </ul>	<b>9</b>
<b>Unit 5</b>	<b>Textiles of the Americas</b>	<b>9</b>

	<p><b>North American Textiles</b></p> <ul style="list-style-type: none"> <li>• Native American textile traditions</li> <li>• Colonial American textiles</li> </ul> <p><b>Latin American Textiles</b></p> <ul style="list-style-type: none"> <li>• Indigenous textile traditions</li> <li>• Spanish influence on Latin American textiles</li> </ul> <p><b>American Textile Development</b></p> <ul style="list-style-type: none"> <li>• Basic cloth production</li> <li>• Textile innovations during the Industrial Revolution</li> <li>• Revival and Renaissance movements in textiles</li> </ul>	
<b>Practical</b>	<ul style="list-style-type: none"> <li>• Portfolio Development and Documentation</li> <li>• Preparation of a portfolio documenting the following textile traditions:</li> <li>• Textiles of the Ancient World</li> <li>• Textiles of the Near and Middle East</li> <li>• Chinese and Japanese Textiles</li> <li>• Italian, Spanish, and French Silks, Tapestries, and Embroideries</li> <li>• Native, Colonial, and Latin American Textiles</li> <li>• English Textile Traditions</li> <li>• Textile Study and Documentation</li> <li>• Identification and classification of historic textiles</li> <li>• Documentation of textile materials, motifs, techniques, and cultural significance</li> <li>• Comparative analysis of textile traditions from different regions</li> <li>• Conservation and Preservation Practices</li> <li>• Study of textile deterioration and damage</li> <li>• Demonstration of handling, storage, and preservation techniques for historic textiles</li> </ul>	<b>30</b>
<b>Pedagogy:</b>	Regular lectures and practical ICT enabled learning experience	
<b>References/ Readings:</b>	<p>Text Books/ Reference Books:</p> <ol style="list-style-type: none"> <li>1. Boucher F. (1987) 2000 years of fashion: The history of costume and personal Adornment, New York: Harry and Abrams Inc. publishers.</li> <li>2. Dar, S. N. (1969) Costumes of India and Pakistan, D. B. Taraporewala Sons &amp; Co, Bombay</li> <li>3. Doreen Y. (1992) Fashion in the western world, 1500-1900, B T Batsford Ltd, London.</li> <li>4. Fas, (1997) Fashion Design 1850-1895, The Pepin Press, Amsterdam.</li> <li>5. Harris, J (1993) 5000 years of Textiles, British Museum, London.</li> <li>6. Hart, A (1998) Historical Fashion in Detail- The 17th and 18th Centuries, V &amp; A Publications, London.</li> <li>7. Hill M H. (1987) The Evolution of Fashion 1066 to 1930, B T Batsford Ltd, London.</li> <li>8. LehnertGertoud, 2000, A history of Fashion in the 20th Century, KonemannVerlagsellschaftMbh, Cologne.</li> <li>9. Peacock J. (1993) 20th Century Fashion - The Complete Source Book, Thames and Hudson Ltd., London.</li> <li>10. Peacock J. (1997) Fashion Source book- The 1930's, Thames and Hudson Ltd., London.</li> <li>11. Peacock J. (1997) Fashion Source book- The 1950's, Thames and Hudson Ltd., London.</li> <li>12. Peacock J. (1997) Fashion Source book- The 1970's, Thames and Hudson Ltd., London.</li> <li>13. Peacock J. (1998) Fashion Source book- The 1960's, Thames and Hudson Ltd., London.</li> <li>14. Racinet, A (1998) The Historical encyclopedia of costumes, Studio editions, London. Illustrat.</li> <li>15. Racinet, A (2000) The history of European Costume: Period, Styles and Accessories, London: Collins and Brown Ltd.</li> </ol>	

	<p>16. Rocinet A (2006) The Complete Costume History, Tashen, Koln.</p> <p>17. Rothstein, N (ed) (1984) Four Hundred years of Fashion, V &amp; A Publications, London.</p> <p>18. Seetling C, (2000) Fashion The Century of the Designer 1900-1999, KonemannVerlagsellschaftMbh, Cologne.</p> <p>19. Turner, W. R. (1989) Folk and Festival Costumes of the World, B T Batsford Ltd., London.</p>
<b>Outcome:</b>	<p><b>The student will be able to :</b></p> <ol style="list-style-type: none"> <li>1. Describe the historical development and cultural significance of textiles from major world civilizations.</li> <li>2. Identify characteristic materials, techniques, motifs, and decorative traditions of historic textiles.</li> <li>3. Compare textile traditions of Europe, Asia, the Middle East, and the Americas.</li> <li>4. Explain factors affecting textile deterioration and the principles of textile conservation and preservation.</li> <li>5. Develop and present a documented portfolio on selected historic textile traditions using appropriate classification and analysis techniques.</li> </ol>



**Name of the Programme** : B.Sc. Home Science -  
**Course Code** : HST-407  
**Title of the Course** : Quality Control for Textiles and Apparel, Fabric  
**Number of Credits** : 3+1 (3 theory+ 1 Practical)  
**Effective from AY** : 2026-27

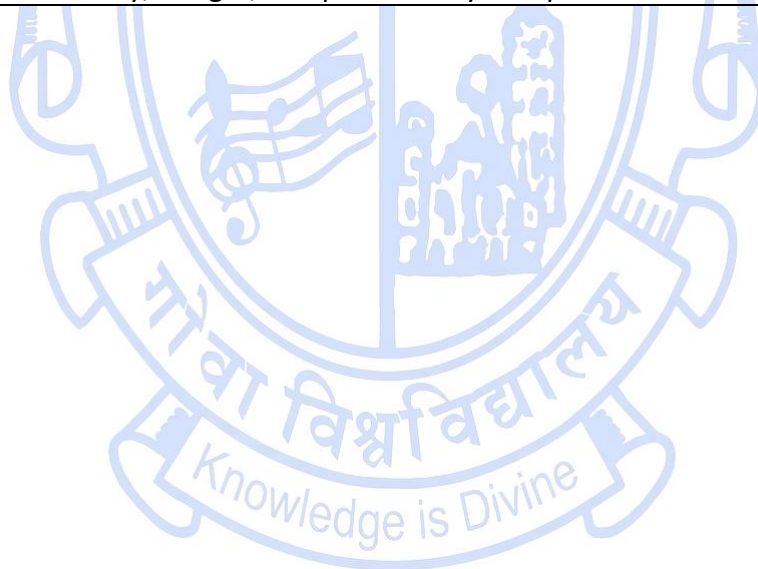
<b>Pre-requisites for the Course:</b>	TY BSc- Home Science- Textiles and Fashion studies	
<b>Course Objectives:</b>	<ol style="list-style-type: none"> <li>To be familiar with the importance of textile testing and quality control in the textile industry.</li> <li>To develop skills in conducting quantitative and qualitative tests for fibers, yarns, fabrics, and garments.</li> <li>To master testing procedures for various properties like dimensions, strength, colorfastness, and seam strength.</li> <li>To explore advanced testing techniques and concepts of statistical quality control in textile testing.</li> </ol>	
<b>Theory</b>	<b>Content</b>	<b>No. of lecture</b>
<b>Unit 1</b>	<b>Introduction to Textile Testing</b> Meaning, definition, need and importance. Textile testing of fibres and yarns, Quantitative and Qualitative Types and size/number - Fibres – length, fineness Yarn – Strength, evenness, openness, load elongation and crimp	<b>5</b>
<b>Unit 2</b>	<b>Fabric dimensions and properties:</b> Woven, knitted and non – woven <b>Testing of fabrics:</b> Length, width, fabric count, weight and thickness, Air and water permeability, Shrinkage, Wrinkle resistance and crease recovery, Abrasion resistance and pilling resistance, Fabric stiffness and Drapability, Flammability, Tensile strength	<b>10</b>
<b>Unit 3</b>	<b>Testing of garments</b> Colorfastness check (Rub test), Symmetry check, Size fitting test, Adhesive check (logos, printings, markings fastness) Fabric weight test (for knitted garments) Fasteners fatigue and zip quality test, Waterproof test, Seam slippage test (for woven garments) Care labeling, Burn test (for 100% cotton garment) Seam strength , Puckering	<b>10</b>
<b>Unit 4</b>	<b>Type of fabric defects (woven &amp; knits)</b> Grading of fabric and its usage Quality standards as applicable to various types of textiles (Garments, yardage, knits, woven, carpet, processing and dyeing) Quality audits: ISO 9001 structure, Quality audits, ISO registration, Statistical sampling and application of AQL	<b>10</b>
<b>Unit 5</b>	<b>Standardization and quality control of textile products</b> Concept, need and importance National and International organizations for standardization Concept of Statistical Quality Control Sampling Test methods used Tolerance limits, CV% Advances in textile testing and quality Assurance	<b>10</b>
<b>Practical</b>	Yarn Testing <ul style="list-style-type: none"> <li>Measurement of yarn linear density (skein method)</li> <li>Yarn crimp, twist, and twist factor</li> <li>Yarn evenness</li> </ul>	<b>30</b>

	<ul style="list-style-type: none"> <li>• Yarn strength: single strand, lea strength, and CSP</li> </ul> <p>Fabric and Garment Testing</p> <p>Strength Properties</p> <ul style="list-style-type: none"> <li>• Fabric strength: breaking force, elongation, strip and grab tests</li> <li>• Tearing strength of woven and non-woven fabrics</li> <li>• Bursting strength of knitted fabrics</li> <li>• Seam strength and seam slippage in woven and knitted fabrics</li> <li>• Evaluation of seam failure</li> </ul> <p>Fabric Handle and Appearance</p> <ul style="list-style-type: none"> <li>• Fabric stiffness and drape</li> <li>• Crease recovery and appearance retention</li> </ul> <p>Fabric and Garment Serviceability</p> <ul style="list-style-type: none"> <li>• Pilling and abrasion resistance</li> <li>• Air permeability and fabric thickness</li> <li>• Fabric count, cover factor, stitch density, and fabric density</li> <li>• Fabric mass per unit area (GSM)</li> </ul> <p>Colour Fastness and Functional Performance</p> <ul style="list-style-type: none"> <li>• Colour fastness to light, crocking, perspiration, washing, and heat</li> <li>• UV protection and UV resistance evaluation</li> </ul>	
<b>Pedagogy:</b>	Regular lectures and practical ICT enabled learning experience	
<b>References/ Readings:</b>	<p>Text Books/ Reference Books:</p> <ol style="list-style-type: none"> <li>1. Shenai V.A. (1984) Technology of Textile Processing, Vol. IX, Sevak Publication</li> <li>2. Booth J.E. Principles of Textile Testing: Newness Butter Worth, London</li> <li>3. Clarke, W. (1977). Introduction to textile printing. London: Newnes Butterworth</li> <li>4. Marsh J.T. (1979) An Introduction to Textile Finishing, B.L. Publications.</li> <li>5. Buchler, A. and Ederbard, F. (1977). Clamp resist dyeing of fabrics. Ahmedabad: Calico Museum of Textile.</li> <li>6. Kulkarni, S.V. (1986). Textile dyeing operations. New Jersey: Noyes Publication</li> <li>7. Rouette, H. K. (2001). Encyclopedia of textile finishes</li> <li>8. Gupta Sushma (2005) Text Book of clothing Textiles and Laundry, Kalyani Publishers New Delhi</li> </ol>	
<b>Outcome:</b>	<p>A successful completion of this course will enable students to</p> <ol style="list-style-type: none"> <li>1. Explain the principles, procedures, and applications of textile and garment testing.</li> <li>2. Apply appropriate testing methods for evaluating quality at different stages of textile production, from fibre to garment.</li> <li>3. Analyze and interpret test results to assess the performance and quality of textile products.</li> <li>4. Evaluate textile and apparel products against established quality standards and specifications.</li> <li>5. Demonstrate knowledge of quality assurance and quality control practices in the textile and garment industry.</li> </ol>	

**Name of the Programme** : B.Sc. Home Science -  
**Course Code** : HST-411  
**Title of the Course** : Image Styling  
**Number of Credits** : 0+4 (0 theory+ 4 Practical)  
**Effective from AY** : 2026-27

<b>Pre-requisites for the Course:</b>	TY BSc- Home Science- Textiles and Fashion studies	
<b>Course Objectives:</b>	<ol style="list-style-type: none"> <li>1. To identify body type, facial features, and personality traits influencing style choices.</li> <li>2. Understand how design elements shape clothing choices.</li> <li>3. Analyze wardrobe needs, organize effectively, and maintain garments.</li> <li>4. Find stores and brands aligning with style, size, and budget for an optimized wardrobe.</li> </ol>	
<b>Practical</b>	<b>Content</b>	<b>No. of Hours</b>
<b>Unit 1</b>	Physical traits and personality Body and figure types Body proportion Figure type and problems Personality	<b>20</b>
<b>Unit 2</b>	Figure analysis Identifying your physical self and facial features	<b>10</b>
<b>Unit 3</b>	Physical attractiveness Its determinants and social effects	<b>10</b>
<b>Unit 4</b>	Concepts and principles of design Effects of design elements and principles on clothing Fashion fundamentals Development of future fashion trends of garments and accessories	<b>20</b>
<b>Unit 5</b>	Personality and dressing Principles of illusion dressing Personal style expression Etiquette and personal grooming Colour and personal style analysis	<b>20</b>
<b>Unit 6</b>	Identifying clothing needs and wardrobe planning Wardrobe analysis and organization Wardrobe style identification Organization and categorization of wardrobe Elements of a basic wardrobe Tips of garment maintenance	<b>20</b>
<b>Unit 7</b>	Personal shopping Preview of apparel / accessory stores ad brands in context to style, size and budget Optimizing wardrobe	<b>20</b>
<b>Pedagogy:</b>	Regular lectures and practical ICT enabled learning experience	
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Text Books/ Reference Books:</li> <li>2. Armstrong, H. J., &amp; LeHew, M. L. A. (2022). <i>Fashion buying</i> (6th ed.). Fairchild Books.</li> <li>3. Bhatia, P. (2021). <i>Fashion styling and image design</i>. Kalyani Publishers.</li> <li>4. Brown, P., &amp; Rice, J. (2023). <i>Ready-to-wear apparel analysis</i> (5th ed.). Pearson.</li> <li>5. Frings, G. S. (2022). <i>Fashion: From concept to consumer</i> (13th ed.). Pearson.</li> <li>6. Gopalakrishnan, D. (2023). <i>Fashion communication and styling</i>. New Century Publications.</li> <li>7. Gupta, D., &amp; Gangwar, G. (2020). <i>Fashion concepts and trends</i>. Kalyani Publishers.</li> </ol>	

	<ol style="list-style-type: none"> <li>8. Jain, R., &amp; Jain, S. (2021). <i>Fashion merchandising and retail management</i>. New Age International Publishers.</li> <li>9. Kumari, V., &amp; Gupta, R. (2022). <i>Image management and personal grooming</i>. Discovery Publishing House.</li> <li>10. Parnesha, R. (2021). <i>Textiles and fashion: Fundamentals of fashion design</i>. CBS Publishers &amp; Distributors.</li> <li>11. Post, P., Post, A., Senning, C., &amp; Post, D. (2022). <i>Emily Post's etiquette</i> (20th ed.). HarperCollins.</li> <li>12. Sehgal, M. (2021). <i>Wardrobe planning and apparel selection</i>. Kanishka Publishers.</li> <li>13. Solomon, M. R. (2023). <i>Consumer behavior: Buying, having, and being</i> (14th ed.). Pearson.</li> <li>14. Sorger, R., &amp; Udale, J. (2021). <i>The fundamentals of fashion design</i> (3rd ed.). Bloomsbury Publishing.</li> <li>15. Stone, E. (2021). <i>The dynamics of fashion</i> (6th ed.). Fairchild Books.</li> <li>16. Suryanarayana, N. V., &amp; Choudhary, A. (2020). <i>Consumer behaviour in fashion and lifestyle products</i>. Himalaya Publishing House.</li> </ol>
<p><b>Outcome:</b></p>	<p>A successful completion of this course will enable students to</p> <ol style="list-style-type: none"> <li>1. Explain the relationship between physical appearance, body proportions, personality, and personal image in the context of image styling.</li> <li>2. Apply principles and elements of design, colour analysis, and illusion dressing techniques to enhance individual appearance and style.</li> <li>3. Analyze clothing needs, body characteristics, lifestyle factors, and fashion trends for effective wardrobe planning and personal style development.</li> <li>4. Demonstrate appropriate grooming, etiquette, wardrobe organization, and personal shopping skills to create a professional and positive image.</li> <li>5. Evaluate apparel, accessories, brands, and fashion choices based on suitability, functionality, budget, and personal style requirements.</li> </ol>

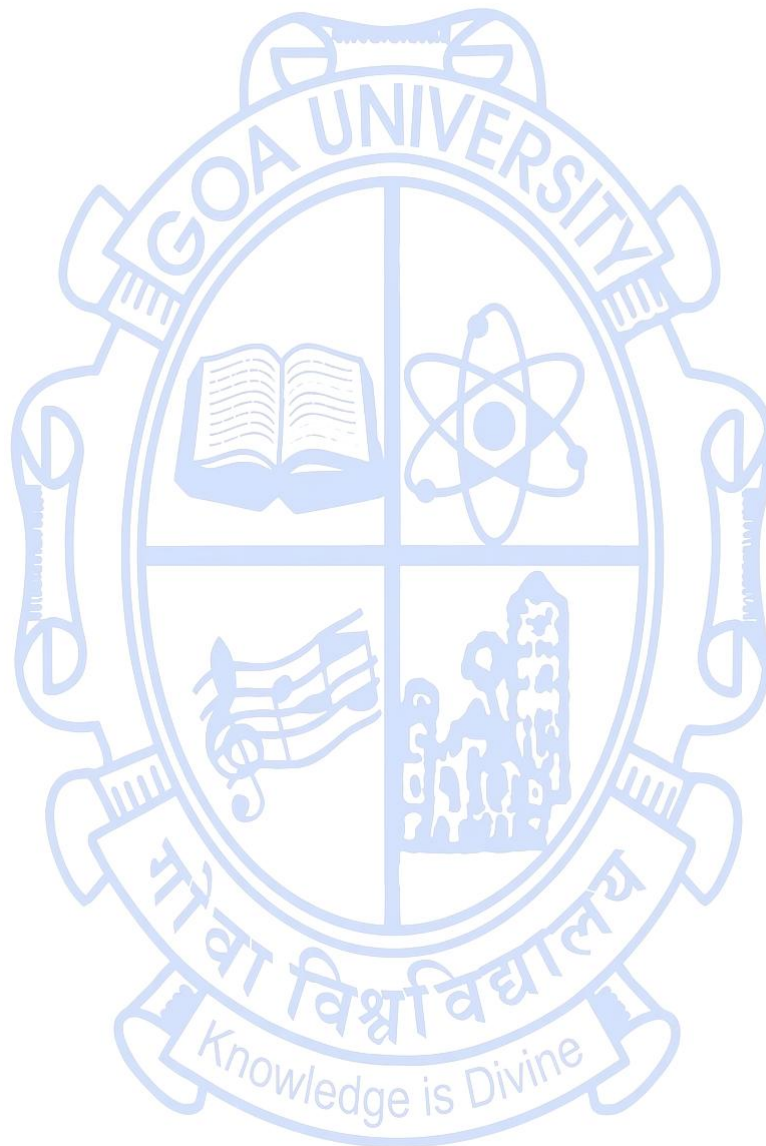


**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HST 412  
**Title of the Course** : Eco Fashion/ Fashion Event Management  
**Number of Credits** : 1+3 (1 theory+ 3 Practical)  
**Effective from AY** : 2026-27

<b>Pre-requisites for the Course:</b>	TY BSc- Home Science- Textiles and Fashion studies	
<b>Course Objectives:</b>	<ol style="list-style-type: none"> <li>1. To develop an understanding of sustainability principles and their application in the fashion industry.</li> <li>2. To examine responsible fashion practices including recycling, upcycling, and circular fashion.</li> <li>3. To familiarize students with eco-friendly fibres, sustainable brands, and emerging trends in sustainable fashion.</li> <li>4. To provide practical exposure to sustainability assessment and eco-fashion product development.</li> <li>5. To develop skills in planning, organizing, and managing fashion events.</li> </ol>	
<b>Theory</b>	<b>Content</b>	<b>No. of Hours</b>
<b>Unit 1</b>	<b>Introduction to Sustainable Fashion</b> <b>Sustainability and Fashion</b> <ul style="list-style-type: none"> <li>• Concept and principles of sustainability</li> <li>• Pillars of sustainability: Environmental, Social, and Economic</li> <li>• Meaning and importance of sustainable fashion</li> <li>• Sustainable Development Goals (SDGs) and the fashion industry</li> </ul> <b>Environmental Impact of Fashion</b> <ul style="list-style-type: none"> <li>• Fast fashion versus sustainable fashion</li> <li>• Challenges and opportunities in sustainable fashion</li> </ul>	<b>5</b>
<b>Unit 2</b>	<b>Responsible Fashion Practices</b> <b>Circular Fashion Concepts</b> <ul style="list-style-type: none"> <li>• Recycling, upcycling, and downcycling</li> <li>• Circular economy in fashion</li> <li>• Sustainable consumption and responsible purchasing behaviour</li> </ul> <b>Environmental Footprints of Fashion</b> <ul style="list-style-type: none"> <li>• Carbon footprint of the fashion industry</li> <li>• Water footprint of textiles and apparel</li> <li>• Energy consumption in textile and garment production</li> <li>• Waste generation and management in fashion</li> </ul>	<b>5</b>
<b>Unit 3</b>	<b>Sustainable Fashion Brands and Eco-Friendly Materials</b> <b>Sustainable Materials</b> <ul style="list-style-type: none"> <li>• Eco-friendly fibres and textiles</li> <li>• Organic, regenerated, recycled, and bio-based fibres</li> <li>• Market trends and consumer acceptance of sustainable materials</li> </ul> <b>Sustainable Fashion Brands and Designers</b> <ul style="list-style-type: none"> <li>• Sustainable fashion designers and innovators</li> <li>• Sustainable fashion brands and eco-labels</li> <li>• Product life cycle and post-consumer management of fashion products</li> </ul>	<b>5</b>
<b>Practical</b>	<b>Practical 1: Industry Exposure</b> <ul style="list-style-type: none"> <li>• Visit to textile, garment, recycling, or sustainable fashion enterprises</li> <li>• Preparation and presentation of industrial visit report</li> </ul>	<b>5</b>
	<b>Practical 2: Eco-Friendly Fibres and Materials</b> <ul style="list-style-type: none"> <li>• Collection and documentation of eco-friendly fibres and textiles</li> <li>• Market survey of sustainable fashion products and brands</li> <li>• Comparative analysis of sustainable and conventional textile materials</li> </ul>	<b>10</b>

	<p><b>Practical 3: Sustainability Assessment</b></p> <ul style="list-style-type: none"> <li>• Assessment of sustainability practices in the fashion industry</li> <li>• Preparation of a report on environmental and social sustainability in fashion</li> <li>• Case study analysis of sustainable fashion brands</li> </ul> <p><b>Practical 4: Upcycling and Sustainable Product Development</b></p> <ul style="list-style-type: none"> <li>• Design and development of products using recycled and upcycled materials</li> <li>• Documentation of design process and sustainability benefits</li> </ul> <p><b>Practical 5: Fashion Event Management</b></p> <p><b>Planning and Organization</b></p> <ul style="list-style-type: none"> <li>• Theme selection and event conceptualization</li> <li>• Budgeting and resource management</li> <li>• Publicity, sponsorship, and promotion</li> </ul> <p><b>Event Execution</b></p> <ul style="list-style-type: none"> <li>• Model coordination and backstage management</li> <li>• Stage design, lighting, and music coordination</li> <li>• Conduct of an eco-fashion show or sustainable fashion exhibition</li> </ul> <p><b>Event Evaluation</b></p> <ul style="list-style-type: none"> <li>• Documentation and reporting of the event</li> <li>• Assessment of event outcomes and audience feedback</li> </ul>	<p><b>10</b></p> <p><b>5</b></p> <p><b>60</b></p>
<p><b>Pedagogy:</b></p>	<p>Interactive lectures  ICT-enabled learning  Case studies and group discussions  Industry visits  Project-based learning  Practical demonstrations and event management exercises</p>	
<p><b>References/ Readings:</b></p>	<p>Text Books/ Reference Books:</p> <ol style="list-style-type: none"> <li>1. Eco Textiles and Sustainability, K. Sangeetha, Laser Park Publishing House, 2017</li> <li>2. Sustainable Textiles: Life Cycle and Environmental Impact, Richard Blackburn, Wood head Pub.Ltd., 2009</li> <li>3. Eco Textiles, Miraftab M. and Horrocks R., Wood head Pub.Ltd, Cambridge, 2007</li> <li>4. Fundamentals of Textiles and their Care, Dantyagi, 1996</li> <li>5. Sustainable Fashion Handbook, Black, S, Thames and Hudson, 2013.</li> <li>6. Re-Fashioned- Cutting Edge Clothing from Upcycled Materials, Brown S, Lawrence King Publishing, 2013.</li> <li>7. Fashion and Sustainability-Design for Change, Fletcher K, Lawrence King Publishing, 2012.</li> <li>8. The Impact and Prospects of Green Chemistry For Textile, Shahid UI-Islam, Bhupendra Singh Butola, Elsevier, 2018</li> <li>9. Environmental Aspects of Textile Dyeing, Christier.M., Woodhead Pub. Ltd, Cambridge, 2007</li> <li>10. Cut up Couture- Edgy Upcycled Garments to Sew, Yamase K, Interweave, 2012.</li> <li>11. Sustainable Fashion and Textiles- A Design Journey, Fletcher K, Lawrence King Publishing, 2008.</li> <li>12. Sustainable Luxe- A Guide to Feel Good Fashion, Phillips J, Create Space Publishing,2013.</li> </ol>	
<p><b>Outcome:</b></p>	<p>A successful completion of this course will enable students to</p> <ol style="list-style-type: none"> <li>1. Explain the concepts, principles, and significance of sustainability in the fashion industry.</li> <li>2. Analyze the environmental and social impacts of textile and apparel production, including carbon, water, and energy footprints.</li> </ol>	

3. Identify sustainable fibres, eco-friendly materials, fashion brands, and responsible fashion practices.
4. Develop sustainable fashion products through recycling, upcycling, and circular design approaches.
5. Plan, organize, and evaluate fashion events with an emphasis on sustainability and professional event management practices.



## SPECIALIZATION 3 - HUMAN DEVELOPMENT AND FAMILY STUDIES

### SEMESTER III

**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSH-200  
**Title of the Course** : Development in Adolescence  
**Number of Credits** : 3T+1P  
**Effective from AY** : 2024-25

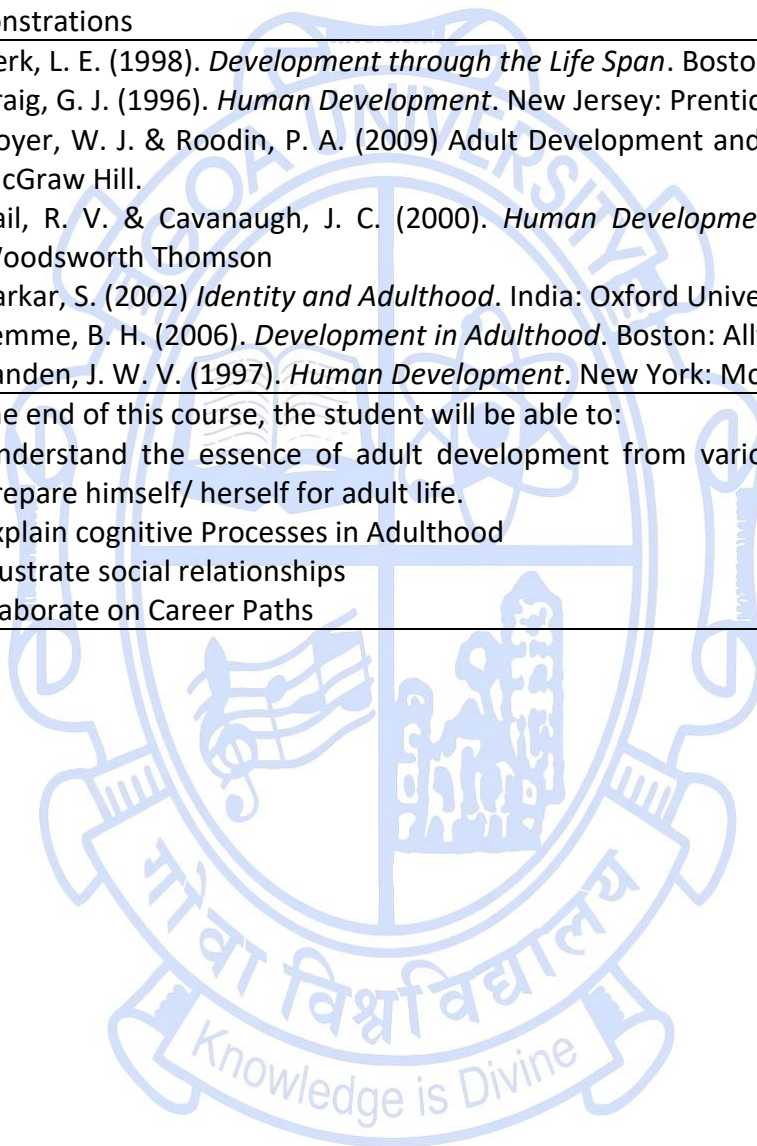
<b>Pre-requisites for the Course:</b>	HSC-111 Fundamentals of Human Development	
<b>Course Objectives:</b>	<ul style="list-style-type: none"> <li>To introduce students to the scientific study of adolescence.</li> <li>To help students learn about key areas of adolescent development and the issues faced during: puberty, health, cognitive and moral development, self, identity, emotions, gender, personality, and sexuality.</li> <li>To help students explore the various contexts which can influence adolescent development: family/ parents/ siblings/ peers/ friends/ school/ culture/ media.</li> <li>To expose students to learnings of how to foster well-being in adolescence.</li> <li>To help students understand their own growth and development across spheres.</li> </ul>	
<b>Content:</b>		<b>No of hours</b>
<b>Unit I</b>	<b>Introduction, History, and Biological Development</b> Historical perspective of the study of adolescence: Developmental Tasks, Storm and Stress, adolescence as a new stage in human development, stereotyping of adolescents, positive youth development theory [SEP] Importance of studying adolescents; status of adolescents in the world and in India [SEP] Puberty: determinants, growth spurt, sexual maturation, secular trends in puberty, pubertal timings and health care, psychological dimensions [SEP] Adolescent health as a critical juncture: nutrition, exercise and sports, sleep, leading causes of death	<b>5</b>
<b>Unit II</b>	<b>Cognitive and Moral Development</b> The cognitive development view: Piaget and Elkind The information processing view: characteristics of the [SEP] information-processing view, attention, memory, executive functioning (decision-making, reasoning, critical thinking, creative thinking) [SEP] Moral development: Piaget, Kohlberg, Religion and spirituality	<b>10</b>
<b>Unit III -</b>	<b>Self, Identity, and Emotions</b> Self: what is the self, multidimensionality, self-concept vs. self- esteem, characteristics of an adolescent's self Identity: Erikson's identity vs. role diffusion, psychosocial moratorium, identity crisis, Marcia's four statuses of identity Emotions: definition, relationship with self-esteem, adolescence as a period of storm and stress, hormones and emotions, social aspects and emotions, emotional competence	<b>10</b>
<b>Unit IV</b>	<b>Personality, Gender, and Sexuality</b> Personality: different conceptions of personality, the Big Five model of personality, person vs. situation as determinants of behavior Gender: femininity, masculinity, role of culture in gender development, sex vs. gender, gender differences (activities and interests, personal-social attributes, social relationships, styles and symbols) [SEP] Sexuality: sex vs. sexuality, importance of sexuality in adolescence, challenges related	<b>5</b>

	to sexuality [L][SEP]	
<b>Unit V</b>	<p><b>Contexts of Adolescent Development</b> [L][SEP]</p> <p>Parents: developmental changes in parents and adolescents, [L][SEP]changing parent-adolescent relationships, parents as managers, parenting styles, parent-adolescent conflict, autonomy and attachment [L][SEP]</p> <p>Siblings: sibling roles [L][SEP]</p> <p>Peer relations: peer group functions, family-peer linkages, peer [L][SEP]conformity, peer statuses, friendship, dating and romantic [L][SEP]relationships [L][SEP]</p> <p>Schools; adolescence as a critical juncture in achievement; [L][SEP]technology; career choices, process and factors influencing it</p> <p>Role of culture; youth in poverty [L][SEP]</p>	<b>5</b>
	<p><b>Challenges, Problems and Wellbeing in Adolescence</b></p> <ul style="list-style-type: none"> <li>• Teen suicide: statistics, common situations in which adolescents commit suicide, symptoms of depression, prevention and intervention [L][SEP]</li> <li>• Academic stress: statistics/profile of adolescents in India related to academic stress, reasons, strategies for coping</li> <li>• Bullying, ragging, aggression/violence, and juvenile delinquency: statistics/profile of adolescents in India, prevention and intervention [L][SEP]</li> <li>• Substance abuse: smoking, alcohol and drugs; influence of peers; prevention and intervention</li> <li>• Strategies for creating well-being in adolescence [L][SEP]</li> </ul>	<b>10</b>
<b>Practical</b>	<ul style="list-style-type: none"> <li>• Collection of related research articles of adolescents for a scrap book.</li> <li>• Tests/activities on different areas of adolescent development – cognitive/learning styles, socio-emotional, personality, etc.</li> <li>• Case study of an adolescent (self and others)</li> </ul>	<b>30</b>
<b>Pedagogy:</b>	<p>Powerpoint Presentations, Songs/Videos, Interactive Activities (Role Play, Puzzles, Games, etc.)</p> <p>Observation &amp; Report Writing, In-Class discussions &amp; debates</p>	
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Berk, L.E. (2007). Development through the Lifespan (4<sup>th</sup> Ed). NY: Pearson Education Inc.</li> <li>2. Santrock, J. W. (2013). Adolescence (14th Ed.). NY: McGraw-Hill. PP</li> <li>3. Rice, F. P. &amp; Dolgin, K. G. (2008). The Adolescent: Development, Relationships, and Culture (12th Ed.). NY: Pearson Education Inc.</li> <li>4. Craig, G. J. (1999). Human Development. NJ: Prentice-Hall, Inc.</li> </ol>	
<b>Course Outcomes:</b>	<p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Elaborate on the various nuances of development in adolescence.</li> <li>2. Understand and evaluate their own development.</li> <li>3. Identify issues they face in various spheres and decipher possible solutions.</li> <li>4. Recognize their personality traits and attributes, for example, learning styles.</li> <li>5. Prevent themselves from vices and learn to evaluate possible pitfalls.</li> <li>6. Handle relationships with peers in a more mature manner.</li> </ol>	

**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSH-201  
**Title of the Course** : Development in Adulthood  
**Number of Credits** : 3T+1P  
**Effective from AY** : 2024-25

<b>Pre-requisites for the Course:</b>	HSC-111 Fundamentals of Human Development	
<b>Course Objectives:</b>	<ul style="list-style-type: none"> <li>To sensitize students to both the challenges and the opportunities of adult life.</li> <li>To help students understand the developmental changes pertinent to family, career, and physical developments across adulthood.</li> <li>To help students have appropriate knowledge and attitudes with regard to the major life events in adulthood including friendship and mate selection and marriage, parenthood, adulthood and life-cycle tasks, etc.</li> </ul>	
<b>Content:</b>		<b>No of hours</b>
<b>Unit I</b>	<b>Introduction to the study of development in adulthood</b> Demography and a changing view of adulthood Increased life expectancy Ageism Why study adult development? Life-Span Developmental Perspective Development is a lifelong process, Development includes both gains and losses,. Development is plastic, Development is embedded in historical, cultural and social contexts Theories relevant to understanding development in adulthood Erik Erikson's psychosocial stages corresponding to adulthood Levinson's seasons of a man's/woman's life Havighurst's developmental tasks	<b>5</b>
<b>Unit II</b>	<b>Cognitive Processes in Adulthood: dimensions and directions</b> Evidence of Cognitive Decline: The Decrementalist View: Major findings Evidence of Cognitive Growth: The Continued-Potential View: Adult life-span learning, quantitative versus qualitative gains in adult cognition, successful cognitive aging	<b>10</b>
<b>Unit III</b>	<b>Social Development, Friendship</b> Overview of social relationships Nature of relationships Benefits of relating Social support Ethnic differences Friendship Nature of friendship Functions of friendship Gender differences Friendship development over the life span Midlife-Crisis – Is it relevant today?	<b>10</b>
<b>Unit IV</b>	<b>Career Development</b> Career Cycle Increasing diversity in career paths Choice of work Age and job satisfaction Gender and work: Women's career paths and special issues Changing nature of women's work and working women Women's career patterns and work experiences Multiple roles: Combining career and family	<b>10</b>

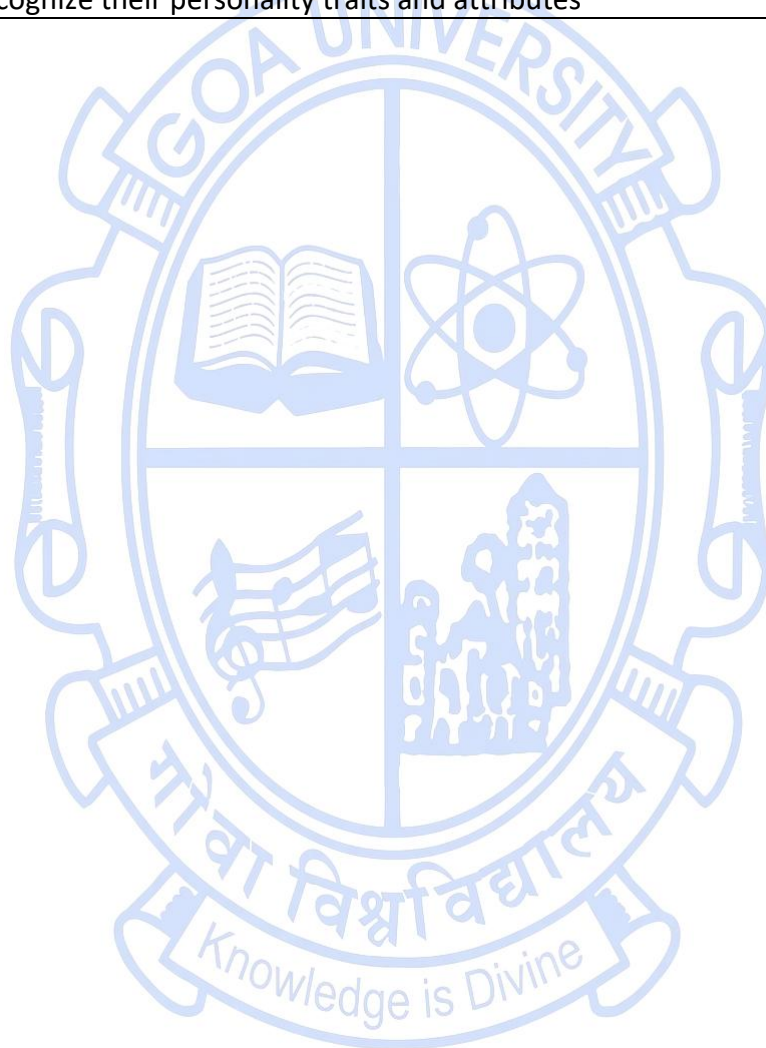
	<p><b>Practical Work:</b></p> <ul style="list-style-type: none"> <li>• Study of adult roles – interview one male and one female adult from the following: <ul style="list-style-type: none"> <li>Single adult</li> <li>Husband/Father</li> <li>Homemaker</li> <li>Employed Woman</li> <li>Single Parent</li> </ul> </li> <li>• Plan and conduct a workshop for adults in any of the above categories</li> <li>• Speak to one middle aged man and one woman about their career journey</li> </ul>	<b>30</b>
<b>Pedagogy:</b>	Powerpoint Presentations, Interactive Activities (Role Play, Puzzles, Games, etc.) Observation & Report Writing In-Class discussions, debates & flipped learning demonstrations	
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Berk, L. E. (1998). <i>Development through the Life Span</i>. Boston: Allyn and Bacon.</li> <li>2. Craig, G. J. (1996). <i>Human Development</i>. New Jersey: Prentice Hall.</li> <li>3. Hoyer, W. J. &amp; Roodin, P. A. (2009) <i>Adult Development and Ageing</i>, (6th ed.) Boston: McGraw Hill.</li> <li>4. Kail, R. V. &amp; Cavanaugh, J. C. (2000). <i>Human Development: A lifespan view</i>. USA: Woodsworth Thomson</li> <li>5. Karkar, S. (2002) <i>Identity and Adulthood</i>. India: Oxford University Press.</li> <li>6. Lemme, B. H. (2006). <i>Development in Adulthood</i>. Boston: Allyn and Bacon.</li> <li>7. Zanden, J. W. V. (1997). <i>Human Development</i>. New York: McGraw Hill.</li> </ol>	
<b>Course Outcomes:</b>	<p>At the end of this course, the student will be able to:</p> <ol style="list-style-type: none"> <li>1. Understand the essence of adult development from various perspectives and also prepare himself/ herself for adult life.</li> <li>2. Explain cognitive Processes in Adulthood</li> <li>3. Illustrate social relationships</li> <li>4. Elaborate on Career Paths</li> </ol>	



**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSH-211  
**Title of the Course** : Essentials of Psychology  
**Number of Credits** : 3T + 1P  
**Effective from AY** : 2024-25

<b>Pre-requisites for the Course:</b>	HSC-111 Fundamentals of Human Development	
<b>Course Objectives:</b>	<ul style="list-style-type: none"> <li>To orient the students to the subject of psychology as a science</li> <li>To help the students to understand basic concepts of psychology</li> <li>To develop student's knowledge of cognitive processes</li> </ul>	
<b>Content:</b>		<b>No of hours</b>
<b>UNIT 1</b>	<b>Nature Of Psychology</b> Psychology as a Science: Historical overview of psychology as a science, Nature & Scope of Psychology Contemporary Approaches to Psychology: Behavioral, Psychodynamic, Cognitive, Sociocultural Approaches, Humanistic Movement and Positive Psychology	<b>15</b>
<b>UNIT 2</b>	<b>Basic Concepts of Psychology</b> Motivation: Nature of motivation Approaches to understanding motivation: Instinct, Drive reduction, Arousal, Incentive, Homeostasis Maslow's hierarchy of needs Emotions: Nature and types of emotions Emotional Intelligence Facial feedback hypothesis	<b>15</b>
<b>UNIT 3</b>	<b>Basic Cognitive Processes</b> Nature of Sensation and Perception: Dimensions of Perception. Mental imagery Memory: Stages of Memory: Encoding, Storage, Retrieval Methods of Retention: Recall, Recognition, Relearning Models of Memory: Levels of processing, Information Processing Model. Forgetting: Forgetting Curve, Decay theory, Interference Theory Learning: Types of learning, observational learning Conditioning: Classical and Operant Problem Solving and Reasoning: Problem Solving: Trial and error, algorithms, heuristics Reasoning: Deductive and Inductive reasoning Creativity	<b>15</b>
	<b>PRACTICAL</b> <ul style="list-style-type: none"> <li>Activity on Learning efficacy using meaningful and meaningless verbal material</li> <li>Effect of Practice on Object Recall</li> <li>Optical Illusion: Muller – Lyer</li> <li>Activity on Depth Perception</li> <li>Activity assessing the use of Mental Set in problem solving</li> <li>Verifying the Stroop Effect</li> <li>Studying how concept formation takes place (using cards or blocks)</li> <li>Activity on Immediate Memory Span for letters and digits</li> </ul>	<b>30</b>

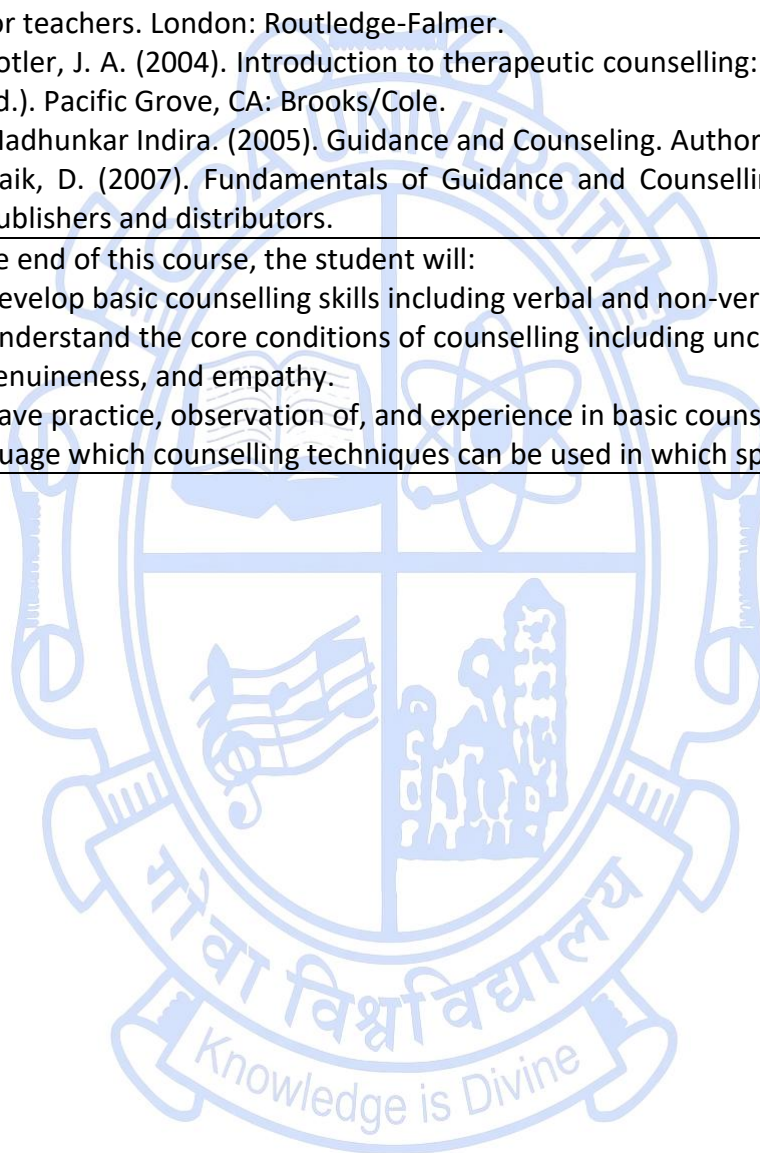
	<ul style="list-style-type: none"> <li>Administration and Analysis of the following tests: <ul style="list-style-type: none"> <li>-Emotional Intelligence Scale</li> <li>-Environmental Awareness Ability Measure (Praveen Kumar Jha)</li> <li>-Cognitive Styles Inventory (Praveen Kumar Jha)</li> <li>-DAT or David's Battery of Differential Ability</li> <li>-What Motivates You? Questionnaire</li> </ul> </li> </ul>	
<b>Pedagogy:</b>	Interactive Lectures, PowerPoint Presentations, Videos, Interactive Activities (Role Play, Puzzles, Games, etc.) Observation & Report Writing, In-Class discussions & debates	
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Santrock, J. W. (2013). Psychology: Essentials (2nd Ed.). Tata McGraw-Hill Education India.</li> <li>2. Feldman, R.S. (2002). Understanding Psychology. New Delhi: Tata McGraw Hill</li> </ol>	
<b>Course Outcomes:</b>	<p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Understand and evaluate their own development</li> <li>2. Identify issues they face in various spheres and decipher possible solutions</li> <li>3. Recognize their personality traits and attributes</li> </ol>	



**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSC-233  
**Title of the Course** : Basic Skills in Guidance & Counselling  
**Number of Credits** : 2T + 1P  
**Effective from AY** : 2024-25

<b>Pre-requisites for the Course:</b>	HSC-111 Fundamentals of Human Development	
<b>Course Objectives:</b>	<ul style="list-style-type: none"> <li>To introduce students to key concepts and differences between guidance and counselling.</li> <li>To help the students to understand the counselling process and related professional skills.</li> <li>To familiarize students with selected methods /approaches /models /specializations which are especially relevant for child and adolescent counselling</li> </ul>	
<b>Content</b>		<b>No of Hours</b>
<b>Unit I</b>	<b>Introduction to Guidance &amp; Counselling</b> <ul style="list-style-type: none"> <li>Guidance: Definition, Objectives, and Principles, Areas of Guidance: Education, vocation, Avocation, social, Health, moral and personal.</li> <li>Counselling: Definition, Objectives, scope, need, characteristics of a counselling relationship, core conditions of counselling</li> <li>Difference between guidance and counselling.</li> </ul>	<b>5</b>
<b>Unit II</b>	<b>The Counselling Process</b> <ul style="list-style-type: none"> <li>The Stages of Counselling – Rapport building, Assessment &amp; diagnosis, Formulation of counselling goals, Intervention &amp; Problem solving, Termination &amp; Follow-up – Overview</li> <li>Ethics and Confidentiality</li> <li>Principles of guidance – Self-development, Universal, individual differences, continuous process and other principles</li> </ul>	<b>5</b>
<b>Unit III</b>	<b>Skills in Counselling</b> <ul style="list-style-type: none"> <li>Macro skills: Communication, Training, Human Assessment/ Diagnostic, Motivation, Ability to identify problems &amp; solution, Training in Administration of Psychological Tests/ Scales and Evaluation</li> <li>Micro skills: Eye-contact, Attending Behaviour, Meta- Communication, Paralinguistic, Non-Verbal Communication and Rapport, Questioning, Observational Skills, Basic Listening Sequence, Reflection</li> </ul>	<b>10</b>
<b>Unit IV</b>	<b>Counselling Approaches</b> <ul style="list-style-type: none"> <li>Individual Counselling Methods: Carl Roger’s Person- Centered Counselling/Therapy (PCC/PCT), Solution-Focused Brief Counselling/Therapy (SFBC/SFBT), Play Therapy</li> <li>Group Counselling: Group leadership skills, Steps in group counselling</li> <li>Professional School Counselling: Distinguishing School Counselling from General Counselling, Advancements in the Conceptualization of School Counselling: Norman Gysber’s Developmentally Comprehensive School Counselling Model, ASCA- Promoted Comprehensive School Counselling Programs, Role of the professional school counsellor</li> </ul>	<b>10</b>
	<b>PRACTICAL</b> <ul style="list-style-type: none"> <li>Interview with a school counsellor/ personal counsellor</li> <li>Counsellor-client roleplay</li> <li>Activities to develop counselling skills</li> <li>Self-awareness self-report questionnaire</li> <li>Observation of a counselling session</li> </ul>	<b>30</b>
<b>Pedagogy:</b>	Powerpoint Presentations, Interactive Activities (Role Play, Puzzles, Games, etc.)	

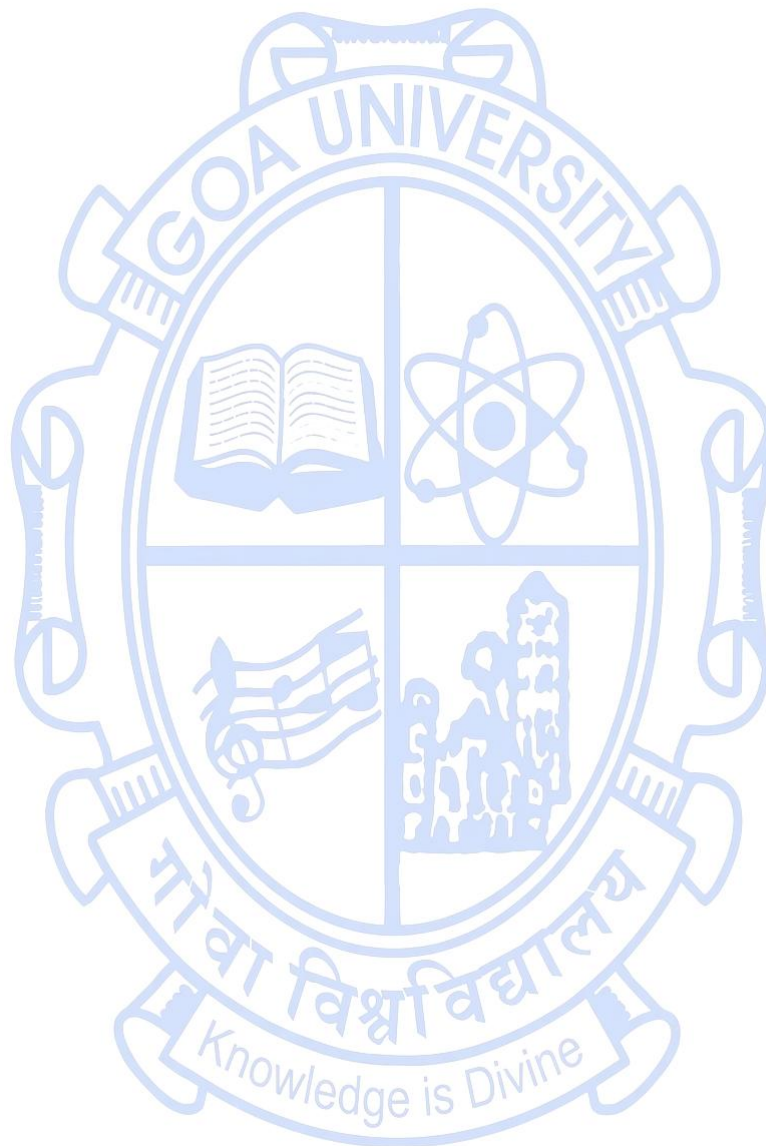
	<p>Observation &amp; Report Writing, In-Class discussions, debates &amp; flipped learning demonstrations</p> <p>Simple self-report psychological tests</p>
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Corey, G. (2015). Theory and practice of group counselling (9th ed.). Boston, MA: Cengage Learning.</li> <li>2. Capuzzi, D., &amp; Gross, D. A. (2008). Counselling and psychotherapy: Theories and interventions (4th ed.). NJ: Prentice-Hall.</li> <li>3. George, R. L., &amp; Cristiani, T. L. (1995). Counselling: Theory and practice (4th ed.). Boston: Allyn &amp; Bacon.</li> <li>4. Gibson, R. L., &amp; Mitchell, M. H. (2008). Introduction to counselling and guidance (7th ed.). New Jersey: Prentice Hall.</li> <li>5. Hornby, G., Hall, C., &amp; Hall, C. (2003). Counselling pupils in schools: Skills and strategies for teachers. London: Routledge-Falmer.</li> <li>6. Kotler, J. A. (2004). Introduction to therapeutic counselling: Voices from the field (5th ed.). Pacific Grove, CA: Brooks/Cole.</li> <li>7. Madhunkar Indira. (2005). Guidance and Counseling. Authorpress, New Delhi.</li> <li>8. Naik, D. (2007). Fundamentals of Guidance and Counselling. New Delhi: Adhyanan publishers and distributors.</li> </ol>
<b>Course Outcomes:</b>	<p>At the end of this course, the student will:</p> <ol style="list-style-type: none"> <li>1. Develop basic counselling skills including verbal and non-verbal attending</li> <li>2. Understand the core conditions of counselling including unconditional positive regard, genuineness, and empathy.</li> <li>3. Have practice, observation of, and experience in basic counselling.</li> <li>4. Gauge which counselling techniques can be used in which specific circumstances.</li> </ol>



Name of the Programme : B.Sc. Home Science  
 Course Code : HSC-243  
 Title of the Course : Creative Teaching Aids & Techniques  
 Number of Credits : 3P  
 Effective from AY : 2024-25

<b>Pre-requisites for the Course:</b>	FY BSc Home Science	
<b>Course Objectives:</b>	<ul style="list-style-type: none"> <li>To introduce students to different teaching aids and techniques used in early childhood education and the need for it.</li> <li>To facilitate the creation and use of low-cost innovative teaching aids and techniques in Early Childhood Education.</li> <li>To facilitate the planning, creation, execution, evaluation and improvisation of developmentally appropriate teaching-learning material.</li> </ul>	
<b>Content:</b>		<b>No of hours</b>
<b>Unit 1</b>	<b>Introduction to Creative Teaching Aids</b> <ul style="list-style-type: none"> <li>The need for creative teaching aids and techniques</li> <li>Types of creative teaching aids (real objects, flashcards with effects such as flaps, Velcro, slits, pop-up, flip-over, slide-out, picture/object talk, flip-chart, accordion, flannel board, story book, story box, magic box, T.V. Scroll, mobiles, wheel, die/dice, fishing rod, costumes, puppets such as finger, ring, dancing, stick, flying, string, spoon, box, bottle, paper cup, paper bag, paper plate, sock, glove, head, and body puppets and muppets)</li> </ul>	<b>10</b>
<b>Unit 2</b>	<b>Making Low Cost Teaching Aids for Early Childhood Education</b> <ul style="list-style-type: none"> <li>The need for low cost materials</li> <li>Stimulating creativity to create teaching aids from available resources</li> <li>Creating low cost teaching aids and testing it</li> </ul>	<b>15</b>
<b>Unit 3</b>	<b>Introduction to Creative Teaching Techniques</b> <ul style="list-style-type: none"> <li>Art and Craft Techniques (Chalk, crayon, painting, printing and paper techniques)</li> <li>Performing Arts Techniques (story-telling, puppet show, dramatization, role plays, songs, music and movement)</li> <li>Other Techniques (demonstration, experiments, picture talk, object talk, show and tell, riddles and quizzes, games, field trips, resource persons, interactive technology)</li> </ul>	<b>20</b>
<b>Unit 4</b>	<b>Using Creative Techniques to Teach Concepts in Early Childhood Education</b> <ul style="list-style-type: none"> <li>Selection of a method or a combination of methods</li> <li>Planning, executing and evaluating teaching techniques</li> </ul>	<b>15</b>
<b>Unit 5</b>	<b>Basic Guidelines for Creating Developmentally Appropriate Teaching-Learning Materials</b> <ul style="list-style-type: none"> <li>Worksheets</li> <li>Activities</li> <li>Games</li> </ul>	<b>10</b>
<b>Unit 6</b>	<b>Creating Developmentally Appropriate Materials</b> <ul style="list-style-type: none"> <li>Reading Readiness Material</li> <li>Writing Readiness Material</li> <li>Math Readiness Material</li> </ul>	<b>20</b>
<b>Pedagogy:</b>	Practical Workshops, Powerpoint Presentations, Demonstrations, Videos	
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>Catron, C. E. &amp; Allen, J. (2015). Early Childhood Curriculum: A Creative Play Model, 4<sup>th</sup> Ed.</li> <li>Isenberg, J. P. &amp; Durham, J. L. (20 ). Creative Materials and Activities for the Early Childhood Curriculum.</li> </ol>	

<b>Course Outcomes:</b>	Students will be able to: <ol style="list-style-type: none"><li>1. Understand the reasons for using creative teaching aids and techniques.</li><li>2. Learn how to think creatively and make low-cost teaching aids and techniques.</li><li>3. Plan, execute, evaluate and improvise teaching aids and techniques.</li><li>4. Develop expertise in using aids and techniques in classroom settings.</li></ol>
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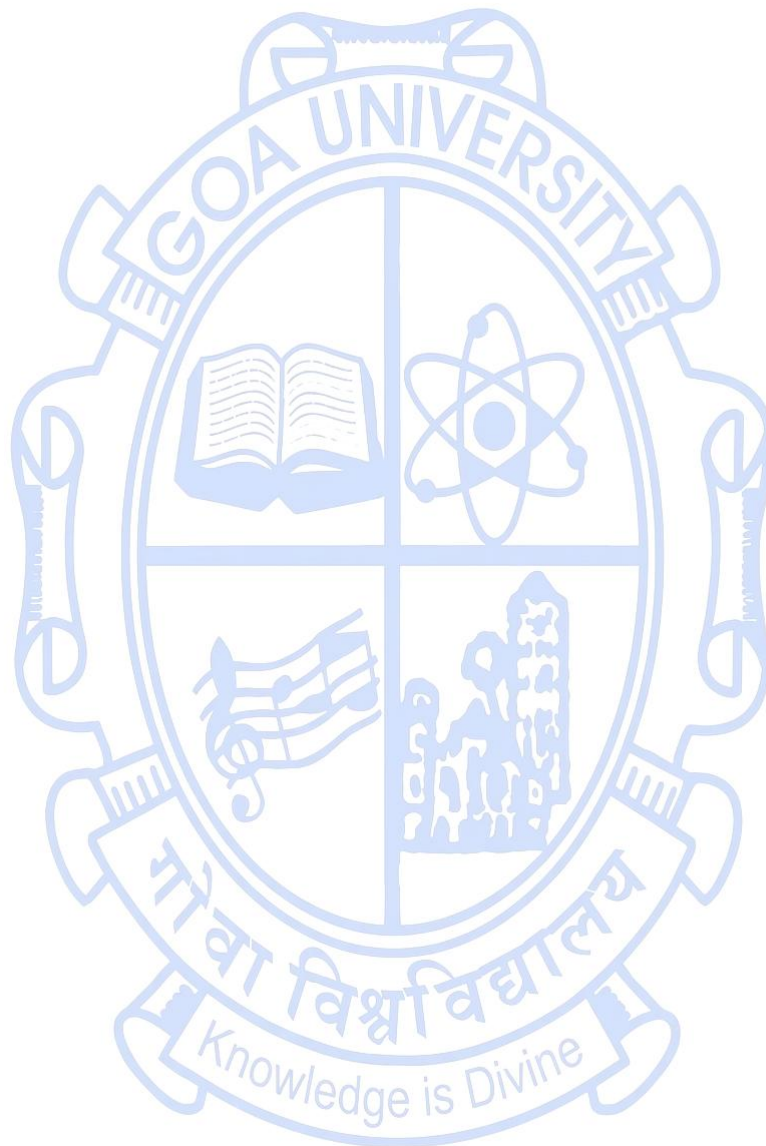
Semester IV

Name of the Programme : B.Sc. Home Science  
 Course Code : HSH-202  
 Title of the Course : Marriage & Family Dynamics  
 Number of Credits : 3T + 1P  
 Effective from AY : 2024-25

<b>Pre-requisites for the Course:</b>	HSC-111 Fundamentals of Human Development	
<b>Course Objectives:</b>	<ol style="list-style-type: none"> <li>1. To provide students with an overview of changing families in changing times.</li> <li>2. To help students examine the issues related to close interpersonal relationships in the family, especially with regard to (a) the marital dyad and (b) parent-child relationships.</li> <li>3. To sensitize students to special issues in the study of marriage and the family such as relationships with grandparents and siblings/intergenerational relationships, family caregiving, family conflict, family violence/abuse, and family interface with other institutions like religion and media.</li> </ol>	
<b>Content:</b>		<b>No of hours</b>
	<p><b>Unit I – Introduction and overview</b></p> <ol style="list-style-type: none"> <li>i. Brief overview of changing families, changing times, demographics</li> <li>ii. Family Life Cycle Theory and its limitations</li> <li>iii. Dating and Mate selection Arranged marriages, self-choice marriages and other ways of selecting one’s partner: Indian perspective Western theories of “Who marries whom and why?”</li> <li>iv. Assessing Readiness for Marriage</li> <li>v. Engagement – Necessary or Not?</li> <li>vi. Preparation for the Wedding or the Marriage?</li> <li>vii. Importance of Honeymoon</li> </ol>	<b>10</b>
	<p><b>Unit II – Marriage and alternative arrangements: A multicultural perspective</b></p> <ol style="list-style-type: none"> <li>i. Demographic data (world statistics, Indian statistics)</li> <li>ii. Love – Theories, Types, Changing viewpoints</li> <li>iii. Changing marital roles</li> <li>iv. Benefits of marriage</li> <li>v. Concepts of marital quality, marital satisfaction and marital stability; characteristics of high quality marital relationships; creating personal and dyadic well-being in marriages; understanding the dynamics of marriage (male-female differences, the seven levels of intimacy, the 5 languages of love, the love and respect cycle)</li> <li>vi. Alternative arrangements: Singlehood, widowhood, divorce, remarriage, reconstituted families, cohabitation, communal habitation/co-living, and homosexual partnerships</li> <li>vii. Sexuality in Marriage and alternative arrangements</li> </ol>	<b>15</b>
	<p><b>Unit III – Parenting Roles &amp; Dynamics</b></p> <ol style="list-style-type: none"> <li>i. Discerning family size</li> <li>ii. Parenting under different arrangements/situations and circumstances (single, separated, divorced, adoption, remarried, widowed, delayed parenthood, voluntary childlessness (DINK), infertility, skipped generation families)</li> <li>iii. Infertility, Contraception and Artificial Techniques of Reproduction</li> </ol>	<b>5</b>
	<p><b>Unit IV – Family Conflict and Family Violence/Abuse</b></p> <ol style="list-style-type: none"> <li>i. Family Conflict: Nature of family conflict and communication</li> <li>ii. Impact of marital conflict on spouses and children (Parent-child conflict, sibling conflict)</li> <li>iii. Family violence/abuse                         <ul style="list-style-type: none"> <li>- Dowry-related violence in Indian families</li> </ul> </li> </ol>	<b>10</b>

	<ul style="list-style-type: none"> <li>- Wife battering; concept of marital rape</li> <li>- Physical, emotional and sexual child abuse in the family</li> <li>- Elder neglect and abuse</li> </ul>	
	iv. Conflict resolution in marriage	
	<b>Unit V - Media-Family Interface</b>	
	The Wired Family (Television, movies, and the Internet): Family and media technology in the new era, Cyberkids	<b>5</b>
	<b>Practical Work:</b>	
	<ol style="list-style-type: none"> <li>1. Mate selection trends/questionnaire</li> <li>2. Marriage readiness reflection</li> <li>3. Overview of wedding traditions and philosophies</li> <li>4. Interview of a married couple</li> <li>5. Interviews of parents of young children, teenagers and adult children</li> <li>6. Examining conflict resolution styles, the five languages of apology, anger management</li> <li>7. Collecting newspaper articles on issues in marriage and family life and discussing and reflecting on the same</li> </ol>	<b>30</b>
<b>Pedagogy:</b>	<ul style="list-style-type: none"> <li>• Powerpoint Presentations</li> <li>• Videos</li> <li>• Interactive Activities (Role Play, Puzzles, Games, etc.)</li> <li>• In-Class discussions, debates &amp; flipped learning demonstrations</li> </ul>	
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Lemme, B. (2006). Development in adulthood (4th ed.). New York, NY: Pearson.</li> <li>2. Gottman, J., &amp; Silver, N. (2015). The seven principles for making marriage work. New York, NY: Harmony.</li> <li>3. Lamanna, M. A., Riedmann, A., &amp; Stewart, S. (2015). Marriages, families, and relationships: Making choices in a diverse society (12th ed.). Belmont, CA: Wadsworth, Cengage Learning.</li> <li>4. Olson, D. H., DeFrain, J., &amp; Skogrand, L. (2013). Marriage and families: Intimacy, diversity, and strengths (8th ed.). New York, NY: McGraw-Hill Education.</li> <li>5. Roy, P. K. (2003). Family diversity in India: Patterns, practices and ethos. New Delhi: Gyan Books.</li> <li>6. Turner, L. H., &amp; West, R. (Eds.) (2006). The family communication sourcebook. New Delhi: Sage.</li> <li>7. Walsh, F. (Ed.) (2012). Normal family processes. Growing diversity and complexity (4th ed.) New York, NY: Guilford Press</li> </ol>	
<b>Course Outcomes:</b>	<p>The student will be able to</p> <ol style="list-style-type: none"> <li>1. Recall key concepts, theories, and demographic data related to marriage, family structures, and alternative arrangements (e.g., family life cycle theory, theories of love, marital satisfaction, and marital roles).</li> <li>2. Explain the evolution of family dynamics, including changing family structures, roles, and societal influences.</li> <li>3. Describe various marriage arrangements (arranged, self-choice, cohabitation) and their cultural implications (Indian and Western perspectives).</li> <li>4. Assess factors influencing marital readiness and make informed decisions regarding engagement, wedding preparation, and the significance of the honeymoon phase.</li> <li>5. Apply knowledge of relationship dynamics (e.g., the love languages, intimacy levels) to real-life family scenarios.</li> <li>6. Analyze different family structures (singlehood, remarriage, cohabitation, and alternative family forms) and evaluate their impact on individual and family well-being.</li> <li>7. Critically examine the roles of parenting in various family arrangements and assess the implications of infertility and assisted reproductive technologies.</li> <li>8. Evaluate marital quality, satisfaction, and stability based on factors like communication patterns, conflict resolution strategies, and gender dynamics.</li> </ol>	

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|  | <ol style="list-style-type: none"><li>9. Assess the impact of family conflict, abuse, and violence (including dowry-related violence, marital rape, and child abuse) on family members and propose strategies for conflict resolution.</li><li>10. Design interventions or strategies to address family issues, including conflict resolution techniques, coping with marital distress, and fostering positive parenting in diverse family situations.</li></ol> |
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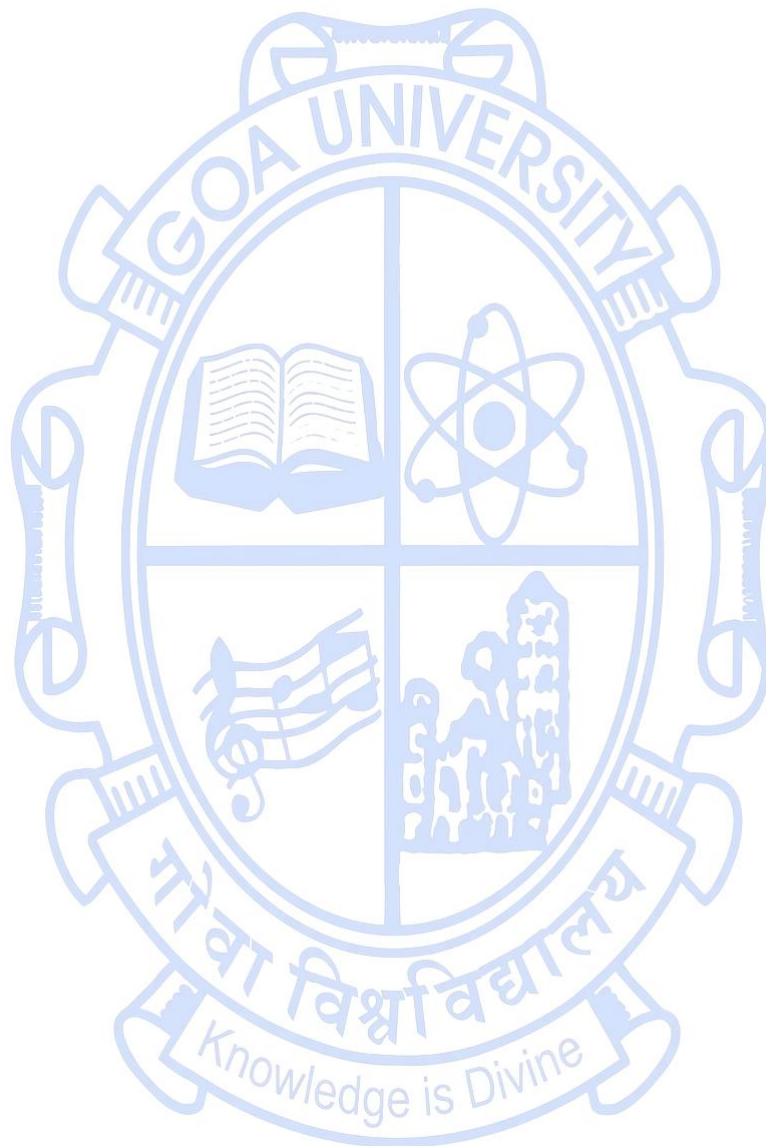


**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSH-203  
**Title of the Course** : Guidance & Counselling  
**Number of Credits** : 3T+1P  
**Effective from AY** : 2024-25

<b>Pre-requisites for the Course:</b>	HSC-111 Fundamentals of Human Development	
<b>Course Objectives:</b>	<ul style="list-style-type: none"> <li>To introduce students to key concepts in guidance and counselling.</li> <li>To help the students to understand the counselling process and develop related professional skills.</li> <li>To familiarize students with approaches to counselling</li> <li>To familiarize students with counselling for special circumstances.</li> </ul>	
<b>Content:</b>		<b>No of hours</b>
	<b>Unit I –Guidance &amp; Counselling</b> i. Differences between Guidance & counselling ii. Difference between counselling, clinical psychology, and psychiatry; distinguishing counseling from psychotherapy iii. What counselling is and what it is not iv. Factors in current society that accentuate the need for professional counselling services for children, adolescents, and adults; environmental challenges that children, adolescents, and adults face v. Basic tenets of a counselling relationship vi. Skills of a counsellor	<b>5</b>
	<b>Unit II – The Counselling Process</b> i. <b>A general model for counselling</b> Step 1: Defining the problem through active listening Step 2: Clarifying the client’s expectations Step 3: Exploring what has been done to solve the problem Step 4: Exploring what new things could be done to solve the problem Step 5: Obtaining a commitment to try one of the problem-solving ideas Step 6: Closing the counselling interview/terminating the counselling sessions ii. Ethics and Confidentiality iii. Possible Complications: Transference, Dependence, Non-adherence, legal conditions to confidentiality	<b>10</b>
	<b>Unit III - Skills in Counselling</b> i. Personal Communication Skills: Eye-contact, Attending Behavior, Meta-Communication, Paralinguistic, Non-Verbal Communication and Rapport, Questioning, Observational Skills, Basic Listening Sequence, Reflection	<b>10</b>
<b>Unit IV – Counselling Approaches</b> i. Carl Roger’s Person-Centered Counselling/Therapy (PCC/PCT) ii. Cognitive Behaviour Therapy iii. Techniques used in Gestalt Therapy iv. Introduction to Transactional Analysis v. Basics of Marital & Family Counselling vi. Special Methods used with Children: Play Therapy, Animal-assisted therapy, Bibliotherapy, Drama Therapy vii. Counselling for children in special situations: abuse, rape, adoption, dealing with illness, death, war, etc. viii. Group Counselling & situations where it is used ix. Professional School Counselling: Norman Gysber’s Developmentally Comprehensive School Counselling Model, Role of the professional school counsellor	<b>20</b>	

	<p><b>Practical Work</b></p> <ul style="list-style-type: none"> <li>• Interview with a school counsellor/ personal counsellor</li> <li>• Counsellor-client roleplay</li> <li>• Activities to develop counselling skills</li> <li>• Self-awareness self-report questionnaire</li> <li>• Observation of a counselling session</li> <li>• Sessions with a practicing counsellor</li> <li>• Observing and evaluating counselling via videos</li> <li>• Survey to understand what youth and adults think about counselling</li> <li>• Review of researches on efficacy of counselling techniques with special groups</li> </ul>	<b>30</b>
<p><b>Pedagogy:</b></p>	<ul style="list-style-type: none"> <li>• Regular teaching, Powerpoint Presentations</li> <li>• Videos</li> <li>• Interactive Activities (Role Play, Puzzles, Games, etc.)</li> <li>• Observation &amp; Report Writing</li> <li>• In-Class discussions, debates &amp; flipped learning demonstrations</li> <li>• Simple self-report psychological tests</li> </ul>	
<p><b>References/ Readings:</b></p>	<ol style="list-style-type: none"> <li>1. Corey, G. (2015). Theory and practice of group counselling (9th ed.). Boston, MA: Cengage Learning.</li> <li>2. Capuzzi, D., &amp; Gross, D. A. (2008). Counselling and psychotherapy: Theories and interventions (4th ed.). NJ: Prentice-Hall.</li> <li>3. George, R. L., &amp; Cristiani, T. L. (1995). Counselling: Theory and practice (4th ed.). Boston: Allyn &amp; Bacon.</li> <li>4. Gibson, R. L., &amp; Mitchell, M. H. (2008). Introduction to counselling and guidance (7th ed.). New Jersey: Prentice Hall.</li> <li>5. Hornby, G., Hall, C., &amp; Hall, C. (2003). Counselling pupils in schools: Skills and strategies for teachers. London: Routledge-Falmer.</li> <li>6. Kotler, J. A. (2004). Introduction to therapeutic counselling: Voices from the field (5th ed.). Pacific Grove, CA: Brooks/Cole.</li> <li>7. Madhunkar Indira. (2005). Guidance and Counseling. Authorpress, New Delhi.</li> <li>8. Naik, D. (2007). Fundamentals of Guidance and Counselling. New Delhi: Adhyanan publishers and distributors.</li> </ol>	
<p><b>Course Outcomes:</b></p>	<p>At the end of this course, the student will be able to :</p> <ol style="list-style-type: none"> <li>1. Recall and define key terms related to guidance and counselling, including the distinctions between counselling, clinical psychology, psychiatry, and psychotherapy.</li> <li>2. List factors in society that highlight the need for professional counselling services for children, adolescents, and adults.</li> <li>3. Identify basic tenets of a counselling relationship and the key skills required for an effective counsellor.</li> <li>4. Describe the steps in the general counselling process, from defining the problem to closing the session.</li> <li>5. Discuss the importance of ethics, confidentiality, and the potential complications (e.g., transference, dependence, non-adherence) in counselling.</li> <li>6. Demonstrate the use of basic counselling skills (active listening, questioning, rapport building, etc.) in practical counselling scenarios.</li> <li>7. Practice communication skills (non-verbal, meta-communication, and questioning techniques) to build rapport and establish a trusting relationship with clients.</li> <li>8. Analyze different counselling approaches (e.g., Person-Centered Therapy, Cognitive Behaviour Therapy, Gestalt Therapy, etc.) and identify their application in specific cases.</li> <li>9. Evaluate the appropriateness of various therapeutic techniques (e.g., play therapy, bibliotherapy, drama therapy) in working with children, especially in special situations like abuse, illness, or trauma.</li> <li>10. Analyze the ethical dilemmas and legal conditions related to confidentiality and professional conduct in counselling settings.</li> </ol>	

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|  | <ol style="list-style-type: none"><li>11. Develop a comprehensive counselling plan tailored to a specific client situation, incorporating appropriate techniques, strategies, and ethical considerations.</li><li>12. Design and implement a counselling session for children or adolescents, selecting the most suitable therapy or intervention for their unique circumstances.</li></ol> |
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**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSH-204  
**Title of the Course** : Social Psychology  
**Number of Credits** : 3T+1P  
**Effective from AY** : 2024-25

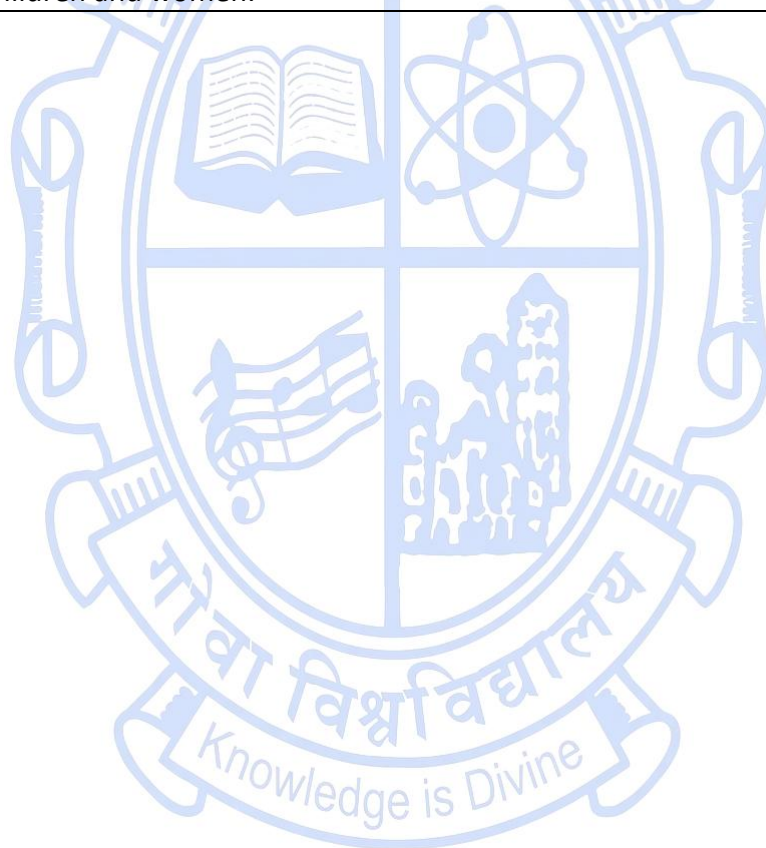
<b>Pre-requisites for the Course:</b>	HSC-111 Fundamentals of Human Development	
<b>Course Objectives:</b>	1. To understand basic concepts and changing trends in Social Psychology. 2. To develop a psychological analysis of relations between the individual and society. 3. To Introduce students to the realm of social influence and behavior, as to how individuals think, feel and behave in social situations.	
<b>Content:</b>		<b>No of hours</b>
	<b>Unit I – Introduction to Social Psychology</b> a. Origin and Development of Social Psychology b. Definition, Nature, Goal and Scope of Social Psychology, Sociometry c. Social Psychology and Related Disciplines	<b>5</b>
	<b>Unit II – Social Perception</b> a. Self-concept and self-esteem b. Perceived self-control (self-efficacy, locus of control, learned helplessness versus self-determination) c. Self-serving bias; self-presentation d. Behaviour, Attitudes and Attributions: The effect of attitudes on behaviour, The effect of behaviour on attitudes, Attributing causality, The fundamental attribution error	<b>15</b>
	<b>Unit III - Group Dynamics</b> a. Conformity: Classic studies (Asch’s studies of group pressure; Milgram’s experiments on obedience), Factors influencing conformity, Resisting social pressure b. Persuasion: The elements of persuasion, Resisting persuasion c. Group Influence: Types of groups, Effects of the group on individual behaviour (social facilitation, social loafing, deindividuation), Decision-making in groups (group polarisation, groupthink, minority influence)	<b>15</b>
	<b>Unit IV – Interpersonal Relationships</b> a. Prejudice: Concept of prejudice, Sources of prejudice (social, emotional, cognitive), Overcoming prejudice b. Aggression, Concept of aggression, Influences on aggression, Reducing aggression c. Attraction: Liking and Loving Others: Factors affecting interpersonal attraction (physical attractiveness, proximity, similarity, competence, reciprocity), Triangular Theory of Love, What enables relationships to endure, Ending relationships d. Altruism: Concept of altruism, Conditions affecting helpfulness (personal and situational influences on helping), Promoting altruism	<b>10</b>
	<b>Practical Work</b> <ul style="list-style-type: none"> <li>• Design a sociogram to depict your relationships.</li> <li>• Evaluate self-concept using a self-report questionnaire</li> <li>• Leadership style questionnaire</li> <li>• Observing behaviour of an individual in different social settings (family, friends, workplace) to understand changes in attitude</li> <li>• Attachment style questionnaire</li> <li>• Interview an individual to assess the influence of social media on social cognition</li> </ul>	<b>30</b>

	<ul style="list-style-type: none"> <li>• Group discussion on factors determining attraction among college students</li> <li>• Identify 5 cases of cognitive dissonance in any movies/web-series/advertisements and provide an analysis in the form of a report</li> </ul>
<b>Pedagogy:</b>	<ul style="list-style-type: none"> <li>• Powerpoint Presentations</li> <li>• Videos</li> <li>• Interactive Activities (Role Play, Puzzles, Games, etc.)</li> <li>• Observation &amp; Report Writing</li> <li>• In-Class discussions, debates &amp; flipped learning demonstrations</li> <li>• Simple self-report psychological tests</li> </ul>
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Markus, H., Kassin, S., &amp; Fein, S. (2020). <i>Social Psychology</i> (11th ed.). Wadsworth Publishing.</li> <li>2. Baron, R.A., Byrne, D. &amp; Bhardwaj. G (2010). <i>Social psychology</i> (12<sup>th</sup> Ed).New Delhi: Pearson.</li> <li>3. Crisp, R.J., Turner, R.N. (2014). <i>Essentials of social psychology</i>, Third Edition, New-Delhi: Sage publications India Private Ltd.</li> <li>4. Myers, D.J., Sahagpal, P., Behera, P. (2012). <i>Social psychology</i>, Tenth Edition, McGraw Hill Education India Private Ltd. (Reprint 2013).</li> <li>5. Schneider, F.W., Gruman, A., Coult, L .M. (Eds.). (2012). <i>Applied social psychology: Understanding and addressing social and practical problems</i>. New Delhi: Sage.</li> </ol>
<b>Course Outcomes:</b>	<p>The student will be able to :</p> <ol style="list-style-type: none"> <li>1. Define key concepts such as self-concept, self-esteem, and social perception, as well as key terms like social facilitation, social loafing, and altruism.</li> <li>2. Explain the nature, goals, and scope of social psychology, as well as the importance of sociometry in understanding social behavior.</li> <li>3. Describe the concepts of self-efficacy, locus of control, learned helplessness, and the self-serving bias, and how they relate to social behavior.</li> <li>4. Apply social psychological concepts such as attitudes, behavior, and attributions to real-life situations, demonstrating the interaction between behavior and attitudes.</li> <li>5. Examine classic studies (e.g., Asch's conformity studies, Milgram's obedience experiments) to evaluate their impact on understanding social behavior.</li> <li>6. Analyze the sources of prejudice (social, emotional, cognitive) and evaluate strategies for overcoming prejudice in different contexts.</li> <li>7. Evaluate the effectiveness of strategies to reduce aggression and promote altruism in different social settings.</li> <li>8. Assess the impact of group influence on individual behavior, decision-making, and group dynamics (e.g., groupthink, minority influence).</li> <li>9. Design strategies to reduce prejudice and aggression in various social environments, utilizing social psychological principles.</li> <li>10. Propose interventions to promote altruism and helping behavior in individuals and communities.</li> </ol>

**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSH-205  
**Title of the Course** : Social Welfare  
**Number of Credits** : 2 (1 Theory + 1 Practical)  
**Effective from AY** : 2024-25

<b>Pre-requisites for the Course:</b>	HSC-111 Fundamentals of Human Development	
<b>Course Objectives:</b>	1. To be able to trace the evolution of a given social problem to understand the historical, economic, cultural and political reasons that an issue has come to be defined as a social problem. 2. To examine the debates surrounding a social problem and compare/ contrast the various sides in the debate to understand why and how groups develop opposing opinions regarding a given social problem and its solution.	
<b>Content:</b>		<b>No of hours</b>
	<b>Unit 1 – Understanding Social Problems and Social Issues with regard to Children::</b> Importance of evaluating issues from a variety of perspectives, all stakeholders points of view Briefly examining historical social issues that were specific to India (eg: Sati, Caste system, etc.) Child’s rights, Child Labour, Child Abuse, Child Refugees, Street Children, Teenage pregnancy, Child Trafficking – Causes, Identification Signs, Methods to combat each of the problems, Interventions.	<b>7</b>
	<b>Unit 2 – Social Issues (with regard to Women) and Vices:</b> Current status of dowry customs, dowry deaths; domestic violence; gender discrimination in various facets of life; infanticide & foeticide, sexual harassment at workplace, eve-teasing, rape; Interventions possible. Policies and Laws for Women and Children in India: - Current Status and Effectiveness Policies and Laws for Others in Difficult Circumstances Vices: Alcoholism, Gambling, Drugs with specific reference to India and State, Possible Interventions	<b>8</b>
	<b>PRACTICAL</b> 1. Conversation with a child encountered on the street & report 2. Movies about social issues with target queries for reflection 3. Visit a police station and speak to lady officer about the cases related to women and children 4. Visit to destitute homes 5. Visits to NGOs working on social issues 6. Conduct a workshop/sports/games for Children and women from any disadvantaged section Write detailed report on it.	<b>30</b>
<b>Pedagogy:</b>	<ul style="list-style-type: none"> <li>• Powerpoint Presentations</li> <li>• Class discussions &amp; debates</li> <li>• Online and Offline Videos</li> </ul>	
<b>References/ Readings:</b>	1. Agarwal, A. and Rao, B.V. (2007). Education of Disabled Children. New Delhi: Eastern Book Corporation. 2. Agnes, F. (1999). Law and Gender Inequality: The politics of Women’s Rights in India. Oxford University Press. 3. Bajpai, A. (2006). Child Rights in India: Law, Policy and Practice. Oxford University Press. 4. Kishwar, M. (1999). Off the Beaten Track: Rethinking Gender Justice for Indian Women. New Delhi: Oxford University Press.	

	<p>5. Satyarthi, K. and Zutshi, B. (Ed) (2006). Globalization, Development and Child Rights. New Delhi: Shipra Publication.</p> <p>6. Saikia, N. (2008). Indian women: A Socio-Legal Perspective. New Delhi: Serials Publication.</p>
<b>Course Outcomes:</b>	<p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Identify and explain key issues affecting children and women, including child labor, abuse, trafficking, dowry deaths, domestic violence, and gender discrimination.</li> <li>2. Recognize historical and contemporary challenges in India (e.g., caste system, Sati) and their relevance today.</li> <li>3. Analyze the causes, signs, and impacts of social issues, particularly for marginalized groups.</li> <li>4. Critically evaluate policies and laws addressing these problems, such as those against child labor and sexual harassment, identifying gaps and areas for improvement.</li> <li>5. Use theoretical knowledge to assess social problems and propose interventions.</li> <li>6. Engage in field activities like interviews and community outreach to apply intervention strategies.</li> <li>7. Develop comprehensive strategies to address social issues, including gender-based violence and addiction.</li> <li>8. Design community engagement activities to empower disadvantaged groups like children and women.</li> </ol>



**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSH-221  
**Title of the Course** : Methods of Child Study  
**Number of Credits** : 3T + 1P  
**Effective from AY** : 2024-25

<b>Pre-requisites for the Course:</b>	HSC-111 Fundamentals of Human Development	
<b>Course Objectives:</b>	1. To help students develop an appreciation of methods of studying Children. 2. To enable them to apply the methods in the study of individuals across the life span.	
<b>Content:</b>		<b>No of hours</b>
	<b>UNIT 1: Introduction</b> a. Value and importance of studying individuals across the life span b. Brief overview of the methods of studying individuals c. Ethical Issues in research on humans d. Relevance of using multi-methods in studying individuals e. Problems/challenges in study of individuals	<b>15</b>
	<b>UNIT 2: Special Considerations in the Study of Children</b> a. Reasons why it is important to study children b. Ethical Considerations in research with children	<b>15</b>
	<b>Unit 3: Observation Method</b> a. Definition b. Types of observational methods i. Natural / Contrived ii. Participant / Non-Participant iii. Disguised / Non-Disguised iv. Human / Mechanical v. Direct / Indirect vi. Structured / Non-Structured c. Steps in the observational process d. Types of recording i. Anecdotal records ii. Checklist iii. Rating scales iv. Narrative records e. Aids in recording f. Sampling techniques (Probability and Non Probability) g. Analyses and interpretation of observation data h. Advantages and disadvantages	<b>15</b>
	<b>Unit 4. Questionnaire method</b> a. Definition b. Types of questionnaires (face to face, mailed) c. Steps in preparing a questionnaire d. Guidelines for the effective wording and the format of a questionnaire e. Enhancing the response rate of the mailed questionnaire f. Analyses of the questionnaire data g. Advantages and disadvantages of the questionnaire method	

	<p><b>PRACTICAL</b></p> <ol style="list-style-type: none"> <li>1. Designing a consent form to obtain parent’s permission for child’s participation in research.</li> <li>2. Developing diverse types of questions to facilitate child study research.</li> <li>3. Creating a structured observation checklist for data collection.</li> <li>4. Formulating an interview schedule tailored for child study.</li> <li>5. Constructing a comprehensive questionnaire for gathering child-related data.</li> <li>6. Locating and reviewing scholarly articles on research conducted with child participants.</li> <li>7. Examining child study-based theories and analyzing their ethical implications, including studies like those by Harry Harlow and the Little Albert experiment etc.</li> <li>8. Identifying and evaluating culture-fair scales and child assessment tools, and distinguishing their unique features.</li> <li>9. Conducting supervised observations and interviews with a child under the guidance of an expert or teacher.</li> <li>10. Compiling a case-study report under supervision of an expert or teacher.</li> </ol>	<b>30</b>
<p><b>Pedagogy:</b></p>	<ul style="list-style-type: none"> <li>• Interactive Lectures</li> <li>• Powerpoint Presentations</li> <li>• Interactive Activities (Role Play, Puzzles, Games, etc.)</li> <li>• Observation &amp; Report Writing</li> <li>• In-Class discussions &amp; debates</li> </ul>	
<p><b>References/ Readings:</b></p>	<ol style="list-style-type: none"> <li>1. Anandalakshmy,S., Chaudhary, N. &amp; Sharma,N. (Eds.). (2008). Researching Families and Children: Culturally</li> <li>2. Appropriate Methods. New Delhi: Sage Publication</li> <li>3. Anastasi, A. &amp; Urbina, S. (1997). Psychological Testing (7th ed.). Indian Reprint. Delhi: Pearson Education.</li> <li>4. Billman, T &amp; Sherman, J. (1996). Observation and Participation in Early Childhood Settings. A Practicum Guide. Boston: Allyn &amp; Bacon</li> <li>5. Gay, L. R. (1990) Educational Research: Competencies for Analysis and Application (3rd ed.) New York: Merrill Publishing Co.</li> <li>6. Jam, G.L. (2003). Research Methodology. Methods, Tools and Techniques, Jaipur: Mangaldeep Publications</li> <li>7. Kothari C R (1999) Research Methodology. Methods and Techniques, (2nd ed.)</li> <li>8. Rubin, A &amp; Babbie, E. (2002) Research Methods for Social Work. California: Brooks/Cole</li> </ol>	
<p><b>Course Outcomes:</b></p>	<p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Identify key concepts, methods, and ethical guidelines used in child study.</li> <li>2. Explain the significance of different research methods (observation, questionnaires) and ethical considerations in child research.</li> <li>3. Implement research methods and ethical guidelines in real-life studies of children.</li> <li>4. Analyze data and research methods to assess their effectiveness and reliability in studying children.</li> <li>5. Critically evaluate the strengths, weaknesses, and ethical considerations of various research methods in child study.</li> <li>6. Design and propose research studies that effectively use observation and questionnaires while considering ethical concerns.</li> </ol>	

**Semester V**

**Name of the Programme : B.Sc. Home Science**

**Course Code : HSH-300**

**Title of the Course : Theoretical Perspectives in Human Development – Part I**

**Number of Credits : 3T+1P**

**Effective from AY : 2025-26**

<b>Pre-requisites for the Course:</b>	SY BSc Home Science – Human Development and Family Relations	
<b>Course Objectives:</b>	<ul style="list-style-type: none"> <li>To introduce students to the basic theoretical perspectives that shaped the field of human development</li> <li>To help students analyse the various theoretical perspectives</li> <li>To assist students to evaluate the application of the theories to contemporary times</li> </ul>	
<b>Content:</b>		<b>No of hours</b>
	<b>Unit 1 – Introduction to Theories</b> a) Definition of a theory b) Reasons for studying theories c) Limitations of developmental theories	<b>2</b>
	<b>Unit 2 – The Psychodynamic Perspective</b> a) Sigmund Freud: Psychoanalytic Theory i. Biographical sketch ii. Levels of consciousness iii. Structure of personality iv. Development through psychosexual stages v. Nature of anxiety and defense mechanisms vi. Application and brief evaluation b) Erik Erikson- Theory of Psychosocial Development i. Biographical sketch ii. Psychosocial stages iii. Application and brief evaluation	<b>13</b>
	<b>Unit 3 – The Cognitive and Moral Perspective</b> a) Jean Piaget—Developmental and Cognitive Perspectives i. Biographical sketch ii. Key concepts in Piaget’s theory iii. Stages of cognitive development iv. Application and brief evaluation b) Howard Gardner – Multiple Intelligence Theory i. Biographical sketch ii. 9 intelligences iii. Application and brief evaluation c) Lawrence Kohlberg—The Moral Development Theory iv. Biographical sketch v. Stages and levels of moral development vi. Application and brief evaluation	<b>20</b>
	<b>Unit 4 – Behavioural &amp; Environmental Perspectives (Bio-Sketch, Key Concepts, Evaluation &amp; Application)</b> a) Theory of Ivan Pavlov b) Theory of B. F. Skinner c) Ecological Perspective: Urie Bronfenbrenner	<b>10</b>
	<b>Practical Work</b> 1. Personal reflection and self-evaluation sheets based on various theoretical perspectives	<b>30</b>

	<ol style="list-style-type: none"> <li>2. Biographical sketches to be compiled for each theorist with a focus on his/her family life and childhood experiences</li> <li>3. Reading up and presenting news and magazine articles related to the theoretical perspectives</li> <li>4. Conduct of Experiments related to certain theories (Piaget) with the relevant age groups</li> <li>5. Locate a suitable, approved tool/scale of psychometric test related to a theory and administer it</li> </ol>	
<b>Pedagogy:</b>	<ul style="list-style-type: none"> <li>• Powerpoint Presentations</li> <li>• Songs/Videos</li> <li>• Interactive Activities (Role Play, Puzzles, Games, etc.)</li> <li>• Observation &amp; Report Writing</li> <li>• In-Class discussions &amp; debates</li> </ul>	
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Baldwin, A. (1980). Theories of child development (2<sup>nd</sup> Ed.). New York: Wiley.</li> <li>2. Berk, L.E. (2007). Development through the Lifespan (4<sup>th</sup> Ed). NY: Pearson Education Inc.</li> <li>3. Craig, G. J. (1999). Human Development. NJ: Prentice-Hall, Inc.</li> <li>4. Crain, W. (2016). Theories of development: Concepts and applications (6<sup>th</sup> Ed). New York: Routledge. Green, M., &amp; Piel, J. A..</li> <li>5. Lerner, R. M. (2015). Concepts and theories of human development (3<sup>rd</sup> Ed.). New York: Routledge.</li> <li>6. Newman, B. M., &amp; Newman, P. R. (2015). Theories of human development (2<sup>nd</sup> Ed.). Hove, UK: Psychology Press.</li> <li>7. Salkind, N. J. (2004). An introduction to theories of human development. New York: Sage.</li> <li>8. Theories of human development: A comparative approach (2<sup>nd</sup> Ed). New York: Routledge.</li> <li>9. Thomas, R. M. (2000). Recent theories of human development. New York: Sage.</li> <li>10. Thomas, R. M. (2004). Comparing theories of child development. (6<sup>th</sup> Ed.). Boston, MA: Cengage Learning.</li> </ol>	
<b>Course Outcomes:</b>	<p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Define key developmental theories and explain their relevance to human development.</li> <li>2. Compare psychodynamic, cognitive, moral, behavioral, and environmental perspectives on development.</li> <li>3. Analyze the influences on and limitations of major developmental theories.</li> <li>4. Critically evaluate the applicability of Freud's, Erikson's, Piaget's, and Gardner's theories in modern contexts.</li> <li>5. Apply moral development theories, such as Kohlberg's, to real-life scenarios.</li> <li>6. Assess the impact of Bronfenbrenner's ecological model on child development.</li> <li>7. Create reflective essays connecting personal experiences with theoretical perspectives.</li> <li>8. Conduct experiments to observe and interpret the stages in Piaget's cognitive theory.</li> <li>9. Design psychometric tools based on theoretical constructs of human development.</li> <li>10. Present biographical analyses of key theorists to understand their contributions to developmental psychology.</li> </ol>	

**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSH-301  
**Title of the Course** : Early Childhood Care & Education (Foundational Stage) – Part I  
**Number of Credits** : 3T+ 1P  
**Effective from AY** : 2025-26

<b>Pre-requisites for the Course:</b>	SY BSc Home Science – Human Development and Family Relations	
<b>Course Objectives:</b>	<ul style="list-style-type: none"> <li>To introduce students to the historic overview of educators and approaches in early childhood education. [SEP]</li> <li>To help students develop an understanding of developmentally-appropriate teaching-learning practices to be used in early childhood education settings.</li> <li>To facilitate an understanding of the role of the environment in learning and behaviour and plan a developmentally appropriate environment</li> <li>To understand the role of schedules, and how to plan a balance of activities in an early childhood environment.</li> </ul>	
<b>Content:</b>		<b>No of hours</b>
	<b>Unit I - Overview of Early Childhood Care and Education (Foundational Stage)</b> a) <b>Significance:</b> Of the foundational years, Special need for Early Childhood Care and Education (ECCE) with reference to India, Status of education for foundational years (ECCE) in India, various types of programmes and centres for foundational years education. b) <b>History of early childhood education, historical overview of educators:</b> Jean-Jacques Rousseau, Johann Pestalozzi, Friedrich Froebel, Maria Montessori, [SEP] Rabindranath Tagore, Mahatma Gandhi, Tarabai Modak, Gijubhai Badhekha.	<b>10</b>
	<b>Unit II – Program and Teacher/Caregiver/Personnel:</b> a) <b>Quality in Early Childhood Programs:</b> Concept of developmental appropriateness; adult-child ratio; group size; mixed-age grouping; developmental-appropriateness of activities; child-adult interactions and roles; staffing; teacher stability; family involvement; child advocacy b) <b>Early Childhood Teachers and Caregivers:</b> Quality, attributes, and role of a good early childhood teacher; training and regulation of quality; professionalism and ethics; current issues and dilemmas (low pay, burnout, teacher turnover, teacher shortage).	<b>15</b>
	<b>Unit III - The Early Childhood Care and Education (Foundational Stage) Environment</b> The role of the indoor and outdoor classroom environment, the importance of learning centres, materials and equipment in the environment, safety of the environment, factors to keep in mind when planning indoor and outdoor classroom spaces, classroom arrangement and its role in classroom management, classroom enrichment.	<b>10</b>
	<b>Unit IV - Scheduling</b> a) <b>Components of the early childhood education schedule</b> Activity time; large-group activities; small-group activities; use of learning centres; outdoor activities; start-of-day and end-of-day activities; clean-up, meals, nap and rest; transitions. b) <b>Guidelines for Program Scheduling</b> Alternating active and quiet times; alternating large-group and small- group activities; balancing child-initiated and teacher-initiated activities; building time for individual interactions; taking into account activity level and developmental level of the children; seasonal considerations; types of	<b>10</b>

	schedules.	
	<b>Practical Work:</b> <ol style="list-style-type: none"> <li>1. Workshops/sessions on different educational philosophies</li> <li>2. Designing a developmentally appropriate ECCE classroom</li> <li>3. Designing a schedule for an ECCE setting</li> <li>4. Virtual/Offline ECCE settings visits</li> <li>5. Interview of an ECCE teacher/caregiver</li> </ol>	<b>30</b>
<b>Pedagogy:</b>	<ul style="list-style-type: none"> <li>• Workshops,Powerpoint Presentations,Demonstrations,Videos,Field Visits</li> <li>• Interactive Activities</li> </ul>	
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. <b>Aggarwal, J. C. (2019).</b> <i>Early Childhood Care and Education: Principles and Practices.</i> New Delhi: Shipra Publications.</li> <li>2. Catron, C. E. &amp; Allen, J. (2015). <i>Early Childhood Curriculum: A Creative Play Model</i>, 4<sup>th</sup> Ed.</li> <li>3. Isenberg, J. P. &amp; Durham, J. L. (2016 ). <i>Creative Materials and Activities for the Early Childhood Curriculum.</i></li> <li>4. <b>Kaul, V. (2010).</b> <i>Early Childhood Education Programme.</i> New Delhi: NCERT.</li> <li>5. <b>Mohanty, J., &amp; Mohanty, B. (2017).</b> <i>Early Childhood Care and Education in India.</i> New Delhi: Deep &amp; Deep Publications.</li> <li>6. <b>Muralidharan, R., &amp; Banerji, A. (2022).</b> <i>Foundations of Early Childhood Education in India: Theory and Practice.</i> New Delhi: Sage Publications.</li> <li>7. <b>NCERT. (2021).</b> <i>National Curriculum Framework for Foundational Stage (NCF-FS).</i> New Delhi: National Council of Educational Research and Training.</li> <li>8. <b>Sharma, D. (2018).</b> <i>Child Development and Early Education: A Psychological Perspective.</i> New Delhi: PHI Learning Pvt. Ltd.</li> <li>9. <b>Singh, A. (2016).</b> <i>Play-based Learning in Early Childhood: A Practical Guide.</i> New Delhi: Prentice Hall India.</li> <li>10. <b>Swaminathan, M., &amp; Daniel, P. (2015).</b> <i>The Early Childhood Care and Education (ECCE) System in India.</i> New Delhi: Oxford University Press.</li> </ol>	
<b>Course Outcomes:</b>	<p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Explain the significance of early childhood care and education in promoting holistic child development.</li> <li>2. Compare the educational philosophies of early childhood pioneers such as Froebel, Montessori, and Tagore.</li> <li>3. Assess key quality indicators in early childhood programs, including child-teacher ratios and curriculum standards.</li> <li>4. Analyze the influence of classroom arrangement and safety on learning in early education settings.</li> <li>5. Create developmentally appropriate daily schedules for early childhood learning environments.</li> <li>6. Evaluate the role and importance of teacher attributes and professional qualities in ECCE.</li> <li>7. Design learning activities that address various developmental domains in young children.</li> <li>8. Conduct field-based interviews with ECCE teachers to explore real-world challenges and insights.</li> <li>9. Create models of developmentally appropriate and inclusive classroom environments.</li> <li>10. Reflect on best practices in foundational stage education through the analysis of case studies.</li> </ol>	

**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSH-302  
**Title of the Course** : Education of the Differently Abled – Part I  
**Number of Credits** : 3T + 1P  
**Effective from AY** : 2025-26

<b>Pre-requisites for the Course:</b>	BSc Home Science – Human Development and Family Relations	
<b>Course Objectives:</b>	<ol style="list-style-type: none"> <li>To introduce students to the idea of people with differing abilities.</li> <li>To reduce the stigma associated with the differently abled.</li> <li>To increase awareness about the differently abled.</li> <li>To introduce students to the terminology and labels associated with the differently abled.</li> <li>To educate students about the signs and symptoms to identify a few common disabilities, and the education/treatment options for them.</li> </ol>	
<b>Content:</b>		<b>No of hours</b>
	<b>Unit 1 – Introduction to the concept of differently abled</b> a) Definitions & Terms such as disabled, impaired, handicapped b) Concepts of Inclusion, Mainstreaming, Least Restrictive Environment (Levels), Equitability with relation to services for the differently abled, IEP, IFSP. c) Team Teaching/Co-Teaching arrangements for Inclusion d) UNCRPD, Local/Indian Laws/Policies/Schemes for the differently abled	<b>10</b>
	<b>Unit 2 – Impact of being differently abled</b> a) Impact of Labelling: Pros and Cons b) How does having a differently abled child impact the: <ol style="list-style-type: none"> <li>Parents, Marital Relationship, Sibling(s), Other family members</li> <li>Social life of the Family</li> </ol> c) Media and its role in the life of the differently abled d) Societal views about the differently abled <ol style="list-style-type: none"> <li>Medical/individual model</li> <li>Social model</li> <li>Contemporary viewpoints</li> </ol>	<b>5</b>
	<b>Unit 3 – Sensory Disabilities (what they are, causes, symptoms, treatment, management, education)</b> a) Blindness & Low Vision b) Deafness & Hearing Impairment c) Autism Spectrum Disorder d) Sensory Processing Disorder	<b>20</b>
	<b>Unit 4 – Conditions leading to physical disabilities</b> a) Cerebral Palsy b) Muscular Dystrophy c) Spina Bifida	<b>10</b>
	<b>Practical Work</b> <ol style="list-style-type: none"> <li>Survey to find out the general public opinions about differently abled.</li> <li>Exploring the facets of Indian policies, laws and schemes for people with disabilities in India.</li> <li>Interaction with a parent/relative of a differently abled child and exploring their experiences.</li> <li>Interaction with a special educator about the joys and challenges faced in education of the differently abled.</li> <li>Visits to a school that includes or works with differently abled and write a report</li> <li>Visit to a resource room and write a report</li> </ol>	<b>30</b>

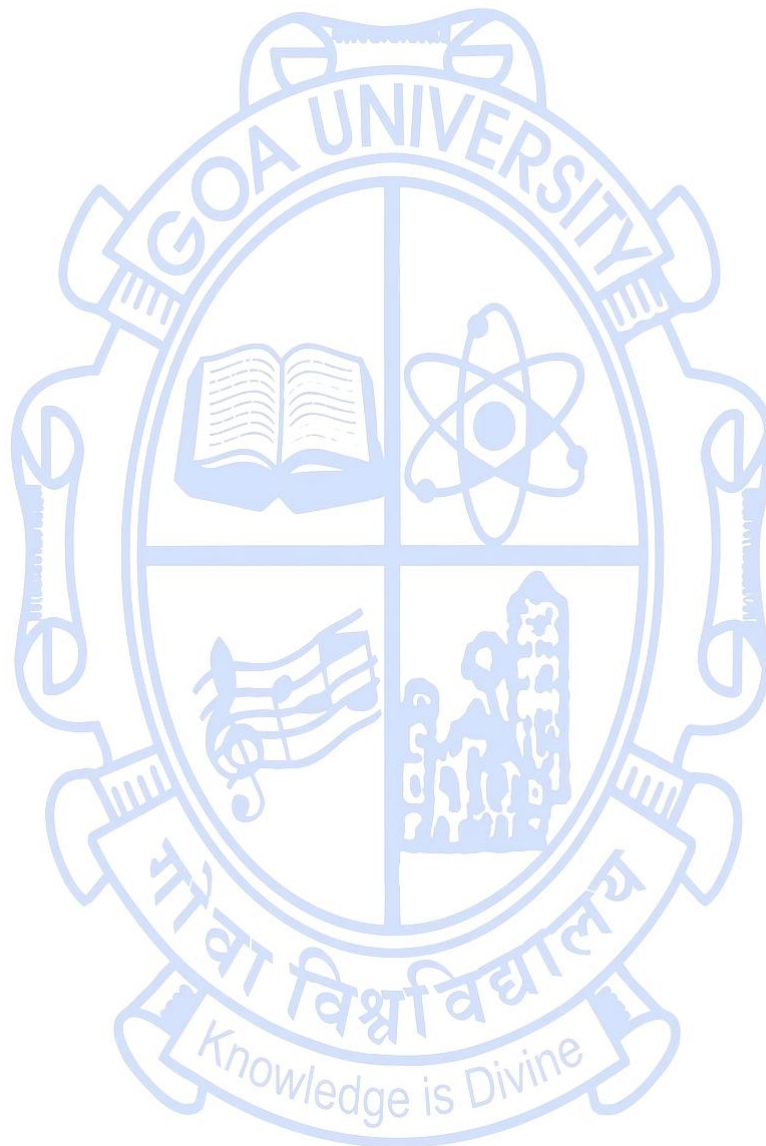
	<ol style="list-style-type: none"> <li>7. Case studies on differently abled children.</li> <li>8. Reflecting/Review on movies and documentaries related to the differently abled.</li> </ol>	
<b>Pedagogy:</b>	<ul style="list-style-type: none"> <li>• Powerpoint Presentations</li> <li>• Songs/Videos/Documentaries/Movies</li> <li>• Interactive Activities (Role Play, Puzzles, Games, etc.)</li> <li>• Observation &amp; Report Writing</li> <li>• In-Class discussions &amp; debates</li> </ul>	
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (5<sup>th</sup> ed.). Washington, DC: American Psychiatric Association.</li> <li>2. Gargiulo, R. M. (2015). Special education in contemporary society: An introduction to exceptionality (5<sup>th</sup> ed.). New York: Sage.</li> <li>3. Hallahan, D. P., Kauffman, J. M., &amp; Pullen, P. C. (2013). Exceptional learners: An introduction to special education (12<sup>th</sup> ed.). Boston, MA: Pearson Education.</li> <li>4. Hardman, M. L., Egan, M. W., &amp; Drew, C. J. (2017). Human exceptionality: School, community, and family (12th ed.). Boston, MA: Cengage Learning.</li> <li>5. Heward, W. L. (2013). Exceptional children: An introduction to special education (10<sup>th</sup> ed.). Boston, MA: Pearson Education.</li> <li>6. Mangal, S. K. (2007). Exceptional Children: An Introduction to Special Education. New Delhi: Prentice Hall of India</li> <li>7. Kharge, M. T. (2014). Rights of persons with disabilities bill, 2014. Retrieved from <a href="http://www.prsindia.org/uploads/media/Person%20with%20Disabilities/The%20Right%20of%20Persons%20with%20Disabilities%20Bill.pdf">http://www.prsindia.org/uploads/media/Person%20with%20Disabilities/The%20Right%20of%20Persons%20with%20Disabilities%20Bill.pdf</a></li> <li>8. Srivastava, P., &amp; Kumar, P. (2015). Disability, its issues and challenges: psychosocial and legal aspects in Indian scenario. Delhi Psychiatry Journal, 18(1), 195-205.</li> </ol>	
<b>Course Outcomes:</b>	<p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Define key concepts such as inclusion, mainstreaming, and least restrictive environments in the context of disability.</li> <li>2. Explain the impact of labeling on the lives, identity, and opportunities of differently abled individuals.</li> <li>3. Assess societal attitudes and media representations related to disability and inclusion.</li> <li>4. Identify signs and symptoms of sensory disabilities, including autism and visual impairments.</li> <li>5. Evaluate educational and treatment interventions for physical disabilities such as cerebral palsy.</li> <li>6. Apply knowledge of the UNCRPD and Indian disability policies to support and advocate for differently abled individuals.</li> <li>7. Analyze the emotional, social, and financial challenges faced by families of differently abled children.</li> <li>8. Design and implement surveys to assess public perceptions about disability and inclusion.</li> <li>9. Develop awareness campaigns aimed at destigmatizing disabilities and promoting inclusive practices.</li> <li>10. Reflect on real-life experiences of caregivers and educators working with differently abled individuals.</li> </ol>	

**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSH-303  
**Title of the Course** : School Administration & Management  
**Number of Credits** : 2T  
**Effective from AY** : 2025-26

<b>Pre-requisites for the Course:</b>	SY BSc Home Science – Human Development and Family Relations	
<b>Course Objectives:</b>	<ol style="list-style-type: none"> <li>1. To comprehend the school as a system; thereby, to use a systemic approach in conceptualizing school administration.</li> <li>2. To understand the role of each stakeholder in education and the issues pertaining to them.</li> <li>3. To evaluate selected school policies and develop critical thinking skills with regard to school policies.</li> <li>4. To be introduced to best practices in school education/innovations in school policies/school reform.</li> </ol>	
<b>Content:</b>	<p style="text-align: right;"><b>No. of hours</b></p> <p><b>Unit I – Overview of a School System and its Management</b>  <b>Introduction &amp; Overview; Conceptual Framework for Understanding School Administration</b><sup>[SEP]</sup>          Definitions/types: schools, education, administration, stakeholders, system.          Functions of schools: general; from the point of view of each stakeholder/group in the system.          Conceptual framework for understanding school administration: school as a system; vision, mission, goals and objectives; process model/feedback cycle; policy-making and other decision-making.  <b>Role of School Principal/School Administrator</b>          Lead Educator and Lead Executive; management versus leadership.<sup>[SEP]</sup> Interpersonal role of school principal: roles vis-à-vis students, teachers, parents, trustees/school board members/management; affective and effective role dimensions (emotional intelligence, handling negativity/handling complaints); public relations; community relations and community support.</p> <p><b>Unit II – Teachers as Stakeholders in the School System</b>  <b>Issues/Topics in School Administration Pertaining to Teachers</b>          Which decisions have to be made pertaining to teachers? And subjected to continuous evaluation?<sup>[SEP]</sup>          Role of teacher in the classroom/Role of teacher vis-à-vis students including child guidance and classroom management.<sup>[SEP]</sup> Role of teacher in the larger school system (vis-à-vis parents, other teachers, school administrators; as an agent facilitating school administration)          Teacher recruitment policy, Teacher reward policy: Types of formal and informal rewards and their importance, Teacher remuneration or monetary compensation policy (formal rewards)          Professional development policy/Teacher development policy.<sup>[SEP]</sup> Teacher evaluation policy.<sup>[SEP]</sup>          Innovations: Teacher Looping (Emphasis: Impact of each policy on students and other participants in the school system; inter-relationships between policies; best practices in education)</p> <p><b>Unit III – Students and Parents as Stakeholders in the School System</b>  <b>Issues/Topics in School Administration Pertaining to Students/Children</b>          Role of the child/student in the classroom/larger school system.<sup>[SEP]</sup>          Classroom arrangement: School size and class size.<sup>[SEP]</sup>          Scheduling Issues: Scheduling teaching-learning periods: Block scheduling Character</p>	<p style="text-align: center;"><b>5</b></p> <p style="text-align: center;"><b>10</b></p> <p style="text-align: center;"><b>10</b></p>

	<p>education; service-orientation<sup>[L][SEP]</sup></p> <p>Student evaluation: Achievement-oriented education/marks-oriented education, disadvantages, alternatives<sup>[L][SEP]</sup> Social Promotion versus retention (Emphasis: Impact of each policy on students and other participants in the school system; inter-relationships between policies; best practices in education)</p> <p><b>Issues/Topics in School Administration Pertaining to Parents:</b> Role of parents in the school: various models and innovations</p>	
	<p><b>Unit IV – Exemplary Models of Schools/Best Practices</b></p> <p><b>Exemplary School Models/Exemplary School Systems; Cross-Cultural Comparisons of Schools or School Systems<sup>[L][SEP]</sup></b></p> <p>Exemplary school models: Toto Chan; Rudolph Steiner and the Waldorf Schools<sup>[L][SEP]</sup></p> <p>Indian origin exemplary school models: J. Krishnamurti Schools (India and worldwide); Chinmaya Mission Schools; VishvaBharati, Shantiniketan: A Rabindranath Tagore initiative; a Mumbai Initiative: Mukhtangan</p> <p>Crosscultural Comparison of School Systems: India, USA, Finland, Germany, &amp; Singapore</p>	<b>5</b>
<b>Pedagogy:</b>	<ul style="list-style-type: none"> <li>• Workshops</li> <li>• Powerpoint Presentations</li> <li>• Demonstrations</li> <li>• Videos</li> </ul>	
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Carter, M., &amp; Curtis, D. (1998). <i>The visionary director: A handbook for dreaming, organizing, &amp; improvising in your center</i>. St. Paul, MN: Redleaf Press.</li> <li>2. Cherry, C., Harkness, B., &amp; Kuzma, K. (2000). <i>Child care center management guide: A hands-on resource</i>. Torrance, CA: Fearon Teacher Aids.</li> <li>3. Click, P. M. (2004). <i>Administration of programs for young children</i>. New York: Thomson Delmar Learning.</li> <li>4. Curtis, D., &amp; Carter, M. (2003). <i>Designs for living and learning: Transforming early childhood environments</i>. St. Paul, MN: Redleaf Press.</li> <li>5. Koralek, D. G. (1995). <i>The what, why, and how of high-quality early childhood education: A guide for on-site supervision</i>. Washington, DC: NAEYC.<sup>[L][SEP]</sup></li> <li>6. Leeper, S. H., Witherspoon, R. L., &amp; Day, B. (1984). <i>Good schools for young children</i>. NY: Macmillan.</li> <li>7. Morgan, G. G. (1999). <i>The bottom line for children's programs: What you need to know to manage the money</i>. Beltsville, MD: Gryphon House.<sup>[L][SEP]</sup></li> <li>8. Mosley, J. (2001). <i>Working towards a whole school policy on self-esteem and positive behavior</i>. Wiltshire, UK: Positive Press.<sup>[L][SEP]</sup></li> <li>9. Mosley, J. (2003). <i>Quality circle time in the primary classroom. Your essential guide to enhancing self-esteem, self-discipline and positive relationships</i>. Cambridge, UK: LDA.<sup>[L][SEP]</sup></li> <li>10. NAEYC. (1997). <i>Developmentally appropriate practice in early childhood programs</i>. Washington, DC: NAEYC.</li> </ol> <p><b>Websites</b></p> <ol style="list-style-type: none"> <li>1. <a href="http://www.aasa.org">www.aasa.org</a> (AASA: American Association of School Administrators)</li> <li>2. <a href="http://www.education-world.com">www.education-world.com</a></li> </ol>	
<b>Course Outcomes:</b>	<p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Define the school as a system and explain its key functions in the context of education.</li> <li>2. Assess the roles and responsibilities of educational stakeholders, including principals, teachers, and parents.</li> <li>3. Compare educational policies related to teacher recruitment, evaluation, and accountability.</li> <li>4. Analyze effective classroom management strategies, including scheduling and optimal class sizes.</li> <li>5. Evaluate exemplary school models such as the Waldorf system and Tagore's Shantiniketan.</li> </ol>	

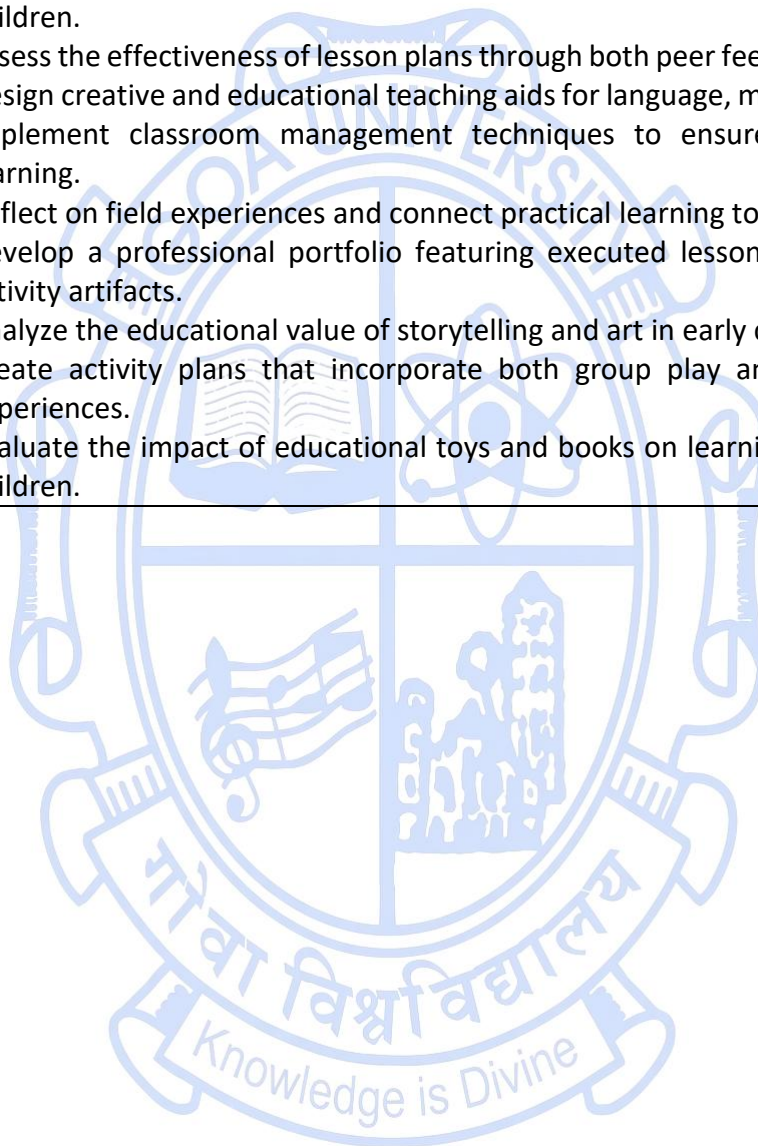
6. Apply feedback models to assess and improve school administration policies and practices.
7. Develop strategies for teacher professional development, motivation, and retention.
8. Conduct cross-cultural comparisons of school systems to understand global perspectives in education.
9. Design policies and frameworks that enhance parental involvement in school processes.
10. Reflect on innovative practices and reforms in school administration through case study analysis.



**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSH-321  
**Title of the Course** : Practical in Preschool Education (Foundational Stage) (V)  
**Number of Credits** : 4P  
**Effective from AY** : 2025-26

<b>Pre-requisites for the Course:</b>	Completed SY BSc Home Science	
<b>Course Objectives:</b>	<ol style="list-style-type: none"> <li>To help students apply theoretical knowledge in practical situations.</li> <li>To enable students to plan, implement and evaluate developmentally-appropriate educational and recreational activities for children.</li> <li>To facilitate the development of classroom management skills in students.</li> <li>To provide students with training such that, they can choose to be teachers of young children, in early childhood education settings.</li> </ol>	
<b>Content:</b>		<b>No. of hours</b>
	<b>Unit I - Orientation to and Observation of a Foundational Stage Setting</b> <ol style="list-style-type: none"> <li>Orienting students to various aspects of the Foundational Stage placement.</li> <li>Input sessions on lesson planning and conducting different activities for foundational stage children.</li> <li>Developing skills in creating and composing stories and songs.</li> <li>Developing skills in creative storytelling.</li> <li>Developing skills in selecting art and craft activities for young children.</li> <li>Developing skills in selecting/creating games/transition activities for young children.</li> <li>Observing the conduction of lessons and activities with children in education settings.</li> <li>Developing a checklist and using it to observe children in the foundational stage setting.</li> </ol>	<b>30</b>
	<b>Unit II - Planning developmentally-appropriate activities for young children in education settings:</b> <ol style="list-style-type: none"> <li>Lesson planning for developmentally-appropriate activities: Brain-storming, discussion as well as written plans.</li> <li>Preparation of teaching aids.</li> <li>Planning the classroom arrangement, classroom enrichment, role(s) of the child, role(s) of the teacher, transition activities, learning centres, field trips, and balance in children's schedules.</li> <li>Mock lessons &amp; evaluation</li> </ol>	<b>30</b>
	<b>Unit III – Executing and evaluating developmentally appropriate activities for young children in education settings:</b> <ol style="list-style-type: none"> <li>Planning and Implementing developmentally-appropriate lesson plans for each area:           <ul style="list-style-type: none"> <li>Language activities,</li> <li>Science activities,</li> <li>Math activities,</li> <li>Social studies/Environmental studies activities,</li> <li>Learning centre activities,</li> <li>Field trips.</li> </ul> </li> <li>Evaluating Lessons (Self and Peers)</li> <li>Learning Classroom Management</li> </ol>	<b>60</b>
<b>Pedagogy:</b>	1. Students are to be placed in a classroom in a preschool in Goa. Their placement is for one day a week and includes planning and evaluation meetings.	

	<ol style="list-style-type: none"> <li>2. Students are guided in their planning, conducting and evaluating developmentally-appropriate activities by the assigned faculty member.</li> <li>3. The students make a portfolio of the lessons that they execute along with photographs or samples of child's work and the evaluation.</li> </ol>
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Catron, C. E. &amp; Allen, J. (2015). Early Childhood Curriculum: A Creative Play Model, 4<sup>th</sup> Ed.</li> <li>2. Isenberg, J. P. &amp; Durham, J. L. (20 ). Creative Materials and Activities for the Early Childhood Curriculum.</li> </ol>
<b>Course Outcomes:</b>	<p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Observe and document preschool activities and environments to understand early childhood learning settings.</li> <li>2. Plan and execute developmentally appropriate activities tailored to the needs of young children.</li> <li>3. Assess the effectiveness of lesson plans through both peer feedback and self-evaluation.</li> <li>4. Design creative and educational teaching aids for language, math, and science activities.</li> <li>5. Implement classroom management techniques to ensure effective teaching and learning.</li> <li>6. Reflect on field experiences and connect practical learning to theoretical concepts.</li> <li>7. Develop a professional portfolio featuring executed lesson plans, photographs, and activity artifacts.</li> <li>8. Analyze the educational value of storytelling and art in early childhood education.</li> <li>9. Create activity plans that incorporate both group play and individualized learning experiences.</li> <li>10. Evaluate the impact of educational toys and books on learning outcomes in preschool children.</li> </ol>



## Semester VI

**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSH-304  
**Title of the Course** : Theoretical Perspectives in Human Development – Part II  
**Number of Credits** : 3T+1P  
**Effective from AY** : 2025-26

<b>Pre-requisites for the Course:</b>	Completed SY BSc Home Science – Human Development and Family Relations <b>HSH-300 Theoretical Perspectives in Human Development – Part I</b>	
<b>Course Objectives:</b>	1. To introduce students to theoretical perspectives that shaped the field of human development 2. To help students analyse theoretical perspectives 3. To assist students to evaluate the application of the theories to contemporary times	
<b>Content:</b>		<b>No. of hours</b>
	<b>Unit 1 – Theories of Attachment (Bio-sketch, Key concepts, Critical Evaluation)</b> a) Theory of Konrad Lorenz b) Theory of John Bowlby c) Theory of Mary Ainsworth	<b>10</b>
	<b>Unit 2 – Behavioural &amp; Cognitive Perspectives (Bio-sketch, Key concepts, Critical Evaluation)</b> a) Theory of John Watson b) Neo-Behaviorism: Theory of Albert Bandura c) Cognition: Theory of Lev Vygotsky	<b>10</b>
	<b>Unit 3 – Psychodynamic &amp; Humanistic Theories (Bio-sketch, Key concepts, Critical Evaluation)</b> a) Theory of Carl Gustav Jung b) Theory of Abraham Maslow c) Theory of Carl Rogers d) Theory of Erich Fromm	<b>10</b>
	<b>Unit 4 – Other Theories of Development</b> a) Theory of Paul Baltes and colleagues - Contexts impelling the development of Life Span theory - Key concepts in Life Span theory - Application and brief evaluation b) Ethnography & its relevance to human development	<b>15</b>
	<b>Practical Work</b> 1. Personal reflection and self-evaluation sheets based on various theoretical perspectives 2. Biographical sketches to be compiled for each theorist with a focus on his/her family life and childhood experiences 3. Reading up and presenting news and magazine articles related to the theoretical perspectives 4. Conduct of experiments related to certain theories with the relevant age groups 5. Locate a suitable, approved tool/scale of psychometric test related to a theory and administer it 6. Evaluation of how media uses psychological theories to condition/reinforce behaviours 7. Evaluation of videos/documentaries related to theory	<b>30</b>
<b>Pedagogy:</b>	<ul style="list-style-type: none"> <li>• Powerpoint Presentations</li> <li>• Songs/Videos</li> <li>• Interactive Activities (Role Play, Puzzles, Games, etc.)</li> </ul>	

	<ul style="list-style-type: none"> <li>• Observation &amp; Report Writing</li> <li>• In-Class discussions &amp; debates</li> </ul>
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Baldwin, A. (1980). Theories of child development (2<sup>nd</sup> Ed.). New York: Wiley.</li> <li>2. Berk, L.E. (2007). Development through the Lifespan (4<sup>th</sup> Ed). NY: Pearson Education Inc.</li> <li>3. Craig, G. J. (1999). Human Development. NJ: Prentice-Hall, Inc.</li> <li>4. Crain, W. (2016). Theories of development: Concepts and applications (6<sup>th</sup> Ed). New York: Routledge. Green, M., &amp; Piel, J. A. (2016).</li> <li>5. Lerner, R. M. (2015). Concepts and theories of human development (3<sup>rd</sup> Ed.). New York: Routledge.</li> <li>6. Newman, B. M., &amp; Newman, P. R. (2015). Theories of human development (2<sup>nd</sup> Ed.). Hove, UK: Psychology Press.</li> <li>7. Salkind, N. J. (2004). An introduction to theories of human development. New York: Sage.</li> <li>8. Theories of human development: A comparative approach (2<sup>nd</sup> Ed). New York: Routledge.</li> <li>9. Thomas, R. M. (2000). Recent theories of human development. New York: Sage.</li> <li>10. Thomas, R. M. (2004). Comparing theories of child development. (6<sup>th</sup> Ed.). Boston, MA: Cengage Learning.</li> </ol>
<b>Course Outcomes:</b>	<p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Recall key biographical details and core concepts of major theorists in attachment, behavioral, cognitive, psychodynamic, and humanistic perspectives.</li> <li>2. Explain the foundational principles of major developmental theories and their relevance to human growth and behavior.</li> <li>3. Compare and contrast different theoretical approaches to human development across various psychological schools of thought.</li> <li>4. Critically evaluate each theory's strengths, limitations, and applications to real-life human development contexts.</li> <li>5. Interpret the role of context, such as family background and culture, in shaping developmental theories.</li> <li>6. Apply theoretical perspectives to analyze current events, media, and everyday behavior.</li> <li>7. Demonstrate the ability to conduct basic experiments or assessments related to developmental theories.</li> <li>8. Develop personal insight through reflection activities connecting theory to one's own development.</li> <li>9. Use psychometric tools to assess psychological constructs in line with selected theories.</li> <li>10. Create biographical profiles and presentations demonstrating a comprehensive understanding of theorists and their contributions.</li> </ol>

**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSH-305  
**Title of the Course** : Early Childhood Care & Education (Foundational Stage) – Part II  
**Number of Credits** : 3T+1P  
**Effective from AY** : 2025-26

<b>Pre-requisites for the Course:</b>	SY BSc Home Science – Human Development and Family Relations <b>HSH 301EARLY CHILDHOOD CARE &amp; EDUCATION (Foundational Stage) – Part I</b>	
<b>Course Objectives:</b>	<ol style="list-style-type: none"> <li>1. To introduce to students the wide range of activities for young children that can be planned in different areas, and how these activities promote various developmental domains as well as cater to holistic development.</li> <li>2. To have students appreciate the value of play in children’s learning and development. [SEP]</li> <li>3. To introduce students to assessment, recording and reporting of children’s progress in the early childhood education setting. [SEP]</li> <li>4. To facilitate students in building the knowledge necessary for planning, conducting and evaluating [SEP]developmentally-appropriate activities for young children. [SEP]</li> <li>5. To facilitate students in developing skills in selecting and evaluating children’s books/media/related educational software.</li> <li>6. To facilitate students in conceptualizing, writing and designing either a book/other media for children.</li> </ol>	
		<b>No. of hours</b>
	<p><b>Unit I – Activities for Physical and Creative Expression</b></p> <p><b>(a) Gross-Motor Activities:</b> Movement, jumping, climbing apparatus, following an obstacle course, rolling and tumbling, throwing and catching, kicking and batting, patting/digging sand, using tools.</p> <p><b>(b) Fine-Motor Activities:</b> Manipulative equipment/toys, Lego blocks, beads, sorting, drawing, painting, stacking rings, small plastic figures.</p> <p><b>(c) Art and Craft Activities:</b> Painting, printing, pasting, drawing, cutting and tearing; making a collage, modelling/sculpture (clay, dough), guided art and craft projects.</p> <p><b>(d) Music and Movement:</b> Goals of music and movement; singing (selecting songs, presenting songs, informal singing, group singing, playing instruments, rhythmic experiences, creating songs, listening experiences); movement and dance (fundamental movements of walking, standing, balancing, running, jumping, galloping, skipping, playing).</p>	
	<p><b>Unit II – Activities for Exploring Learning</b></p> <p><b>(a) Language activities:</b> Stories, poetry, books, sharing time/circle time, group discussion, puppets, dramatization/role play, reading corner, reading and writing readiness for preschool children.</p> <p><b>(b) Science Activities:</b> Defining sciencing; developmentally-appropriate science for preschool children; goals and objectives for sciencing activities; scientific process (observing, classifying and comparing, measuring, experimenting and relating, inferring and applying); science table; science walks; science projects and experiments; providing a safe environment.</p> <p><b>(c) Mathematics activities:</b> Defining mathematics; mathematical concepts, processes, understanding and skills (classifying, comparing, ordering, patterning, counting, shapes and space, measurement, fractions, vocabulary, numerical operations); use of toys and educational material; arithmetic readiness.</p> <p><b>(d) Social Studies activities:</b> Appreciating diversity; appreciating own and other cultures/communities; knowing about different occupational roles; building starting knowledge of geography/ history/ ecology.</p>	
		<b>15</b>
		<b>15</b>

	<p><b>Unit III - Play &amp; Assessment/ Recording/ Reporting</b></p> <p><b>(a) Significance and Role of Play:</b> Defining play, value and purpose of play, stages/levels of play, types of play, child's role, teacher's role (observer, elaborator, modeller, planner, evaluator).</p> <p><b>(b) Assessing, Recording and Reporting Children's Progress:</b></p> <ul style="list-style-type: none"> <li>• Assessment: Meaning and definition of assessment, purpose of assessment, planning assessment, types of assessment (informal and formal methods). [L][SEP]</li> <li>• Recording: Meaning, purpose, and use of records; types of records. [L][SEP]</li> <li>• Reporting: Meaning, purpose, and methods of reporting. [L][SEP]</li> </ul>	<b>10</b>
	<p><b>Unit IV - Evaluating Children's Books and Media</b></p> <ul style="list-style-type: none"> <li>• Descriptive and evaluative assessment through a visit to a children's library/ bookstore or through watching the show on TV. [L][SEP]</li> <li>• Developing criteria for evaluation of books, and for evaluation of children's TV shows. [L][SEP]</li> </ul>	<b>5</b>
<b>Content:</b>	<p><b>Practical Work:</b></p> <p><b>1. Attending and participating in workshops/preschool settings on developmentally-appropriate activities for children in the following areas:</b></p> <ul style="list-style-type: none"> <li>• Fine-motor and gross-motor activities (e.g. blocks, manipulatives, outdoor play)</li> <li>• Art and craft activities [L][SEP]</li> <li>• Music and movement [L][SEP]</li> <li>• Language activities (e.g., picture talk/object talk/circle time/story time)</li> <li>• Science and math activities</li> <li>• Social studies activities [L][SEP]</li> <li>• Sociodramatic play [L][SEP]</li> </ul> <p><b>2. Designing children's books or related educational toys, or conceptualising a TV show and presentation of it</b></p> <ul style="list-style-type: none"> <li>• Features to keep in mind while designing media/toys for children (e.g., content, layout, target group, cost, text versus pictures) [L][SEP]</li> <li>• Planning the designing of a book and toy based on a theme and constructing it.</li> <li>• Conceptualising a TV show for children and making the script for at least one episode. [L][SEP]</li> </ul>	<b>30</b>
<b>Pedagogy:</b>	<ul style="list-style-type: none"> <li>• Powerpoint Presentations</li> <li>• Demonstrations</li> <li>• Videos</li> <li>• Interactive lectures</li> <li>• Activities &amp; Workshops</li> </ul>	
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Balke, E. (1997). Play and the arts: The importance of the unimportant. <i>Childhood Education</i>, 73(6), 355–360. Association for Childhood Education International.</li> <li>2. Brassard, M. R., &amp; Boehm, A. E. (2007). <i>Preschool assessment: Principles and practices</i>. The Guilford Press.</li> <li>3. Bredekamp, S., &amp; Copple, C. (Eds.). (1997). <i>Developmentally appropriate practice in early childhood programs</i>. National Association for the Education of Young Children.</li> <li>4. Brock, A., Dodds, S., Jarvis, P., &amp; Olusoga, Y. (Eds.). (2008). <i>Perspectives on play: Learning for life</i>. Pearson Education Ltd.</li> <li>5. Burrill, R. (2010). The primacy of movement in art making. <i>Teaching Artist Journal</i>, 8(4), 216–228. Routledge / Taylor &amp; Francis Group.</li> <li>6. Dharmarajan, G. (2012). <i>Story pedagogy: A teaching-learning tool</i>. Katha Publishing.</li> <li>7. Frost, J. L. (1980). Free to be: The arts and child development. <i>Childhood Education</i>, 57(2), 66–71. Association for Childhood Education International.</li> </ol>	

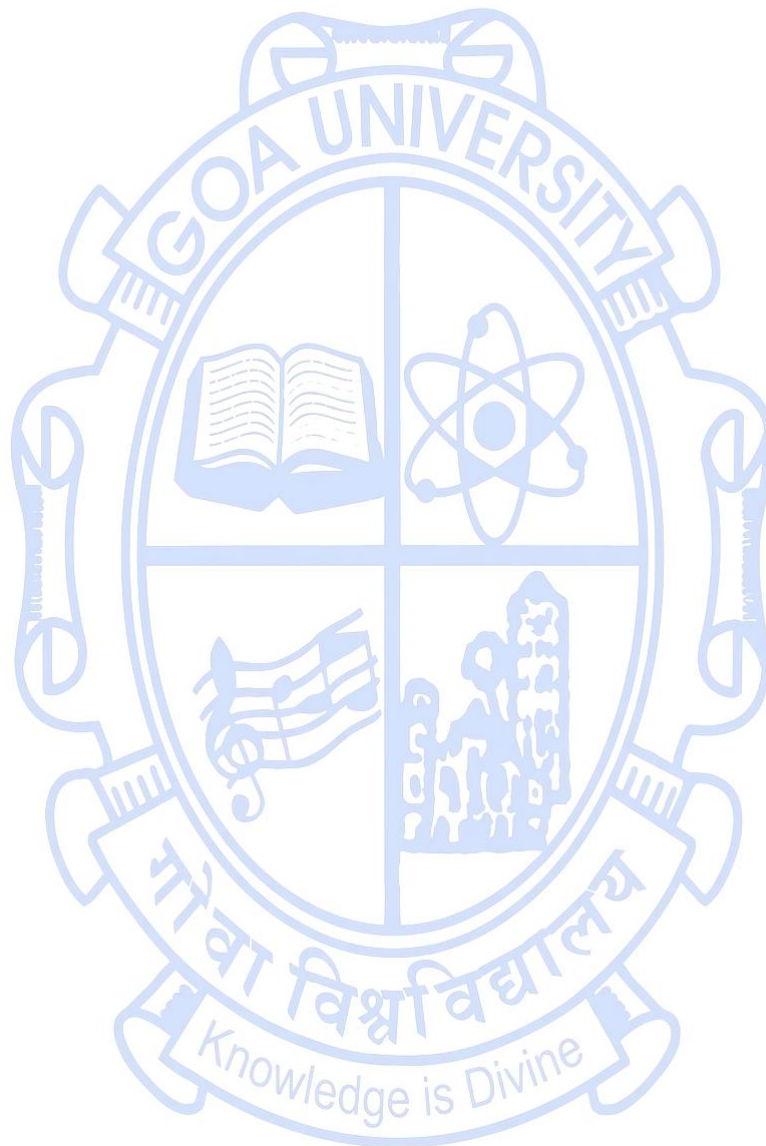
	<ol style="list-style-type: none"> <li>8. Ginsburg, H. P., Inoue, N., &amp; Seo, K. H. (1999). Young children doing mathematics: Observations of everyday activities. In J. Copley (Ed.), <i>Mathematics in the early years</i> (pp. 88–99). National Council of Teachers of Mathematics.</li> <li>9. Mayesky, M. (2015). <i>Creative activities and curriculum for young children</i> (11th ed.). Cengage Learning.</li> <li>10. Pattnaik, J. (1996). Early childhood education in India: History, trends, issues, and achievements. <i>Early Childhood Education Journal</i>, 24(1), 11–16. Springer.</li> <li>11. Pellegrini, A. D. (Ed.). (2011). <i>The Oxford handbook of the development of play</i>. Oxford University Press.</li> <li>12. Popat Vats, S. (2013). <i>How to teach so kids can learn</i>. Podar Publishing.</li> <li>13. Sansom, A. N. (2011). <i>Movement and dance in young children's lives: Crossing the divide</i>. Peter Lang Publishing.</li> <li>14. Swaminathan, M. (1994). <i>Drama in education: A manual for teachers</i>. Indian Association for Pre-school Education.</li> <li>15. Wright, S. (2012). <i>Children, meaning-making and the arts</i> (2nd ed.). Pearson Australia.</li> </ol>
<p><b>Course Outcomes:</b></p>	<p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Identify key activities that promote physical, cognitive, and creative development in early childhood.</li> <li>2. Explain the significance of play in fostering holistic development in young children.</li> <li>3. Demonstrate effective strategies for engaging children in motor, art, music, and movement activities.</li> <li>4. Implement developmentally appropriate language, science, math, and social studies activities in preschool settings.</li> <li>5. Compare and contrast different theories and approaches to early childhood learning and play.</li> <li>6. Evaluate children's books, TV shows, and educational media based on set criteria.</li> <li>7. Assess children's progress using formal and informal methods of recording and reporting.</li> <li>8. Design creative learning materials such as books, toys, and media content for preschoolers.</li> <li>9. Develop structured plans for conducting and assessing preschool activities.</li> <li>10. Reflect on the role of educators in fostering an inclusive and engaging learning environment for young children.</li> </ol>

**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSH-306  
**Title of the Course** : Education of the Differently Abled – Part II  
**Number of Credits** : 3T+1P  
**Effective from AY** : 2025-26

<b>Pre-requisites for the Course:</b>	Completed SY BSc Home Science – Human Development and Family Relations <b>HSH-302 Education of the Differently Abled – Part I</b>	
<b>Course Objectives:</b>	<ol style="list-style-type: none"> <li>To help students develop an awareness and concern for individuals with exceptionality (both children and adults), their needs and problems.</li> <li>To reduce the stigma associated with the differently abled.</li> <li>To increase awareness about the differently abled.</li> <li>To introduce students to the terminology and labels associated with the differently abled.</li> <li>To educate students about the signs and symptoms to identify common disabilities, and the education/treatment options for them.</li> <li>To help students gain knowledge about the different categories of exceptionality, their prevalence, causes, prevention, and characteristics.</li> <li>To introduce students to the education, assessment and rehabilitation of exceptional children and adults, with special reference to the Indian context.</li> </ol>	
<b>Content:</b>		<b>No. of hours</b>
	<b>Unit 1 – Intellectual &amp; Related Disabilities</b> a) Intellectual Disorders/Disabilities b) Learning Disabilities (Dyslexia, Dysgraphia, Dyscalculia)	<b>10</b>
	<b>Unit 2 – Chronic Health Problems</b> a) Epilepsy b) Cancer c) Juvenile Diabetes d) HIV/AIDS e) Asthma	<b>10</b>
	<b>Unit 3 – Communication Disorders</b> a) Speech and Language Disorders	<b>5</b>
	<b>Unit 4 – Assistive Technology</b> a) What is Assistive Technology? b) Assistive Technology and Special Education c) Assistive Technology used for different exceptionalities. d) Assistive Technology in India	<b>10</b>
	<b>Unit 5 – Accessibility &amp; Other Issues in Exceptionality</b> a) Accessibility to Basic Services b) Facilities to improve accessibility in India c) Current Issues with relation to exceptionality in India	<b>10</b>
	<b>Practical Work</b> <ol style="list-style-type: none"> <li><b>Case Study Documentation</b> <ul style="list-style-type: none"> <li>Observe and document a case of a child with an intellectual or learning disability (e.g., dyslexia or dyscalculia), focusing on challenges and coping strategies.</li> </ul> </li> <li><b>Interview with a Special Educator or Therapist</b> <ul style="list-style-type: none"> <li>Conduct and report an interview focusing on support strategies used for children with chronic health conditions or communication disorders.</li> </ul> </li> <li><b>Assistive Technology Demonstration</b> <ul style="list-style-type: none"> <li>Visit a resource center or special school to observe and document assistive devices used for children with different exceptionalities.</li> </ul> </li> <li><b>Design a Simple Assistive Tool</b> <ul style="list-style-type: none"> <li>Create a basic prototype of an assistive tool or learning aid (e.g., a tactile alphabet board, visual schedule chart, or low-tech communication board).</li> </ul> </li> </ol>	<b>30</b>

	<ol style="list-style-type: none"> <li>5. <b>Assessment of Accessibility in Public Spaces</b> <ul style="list-style-type: none"> <li>○ Evaluate the accessibility features (e.g., ramps, signage, toilets) of a school, hospital, or public facility using a checklist.</li> </ul> </li> <li>6. <b>Create an Awareness Poster or Brochure</b> <ul style="list-style-type: none"> <li>○ Design educational material about a selected disability or assistive technology for parents or teachers.</li> </ul> </li> <li>7. <b>Review of National Policies and Schemes</b> <ul style="list-style-type: none"> <li>○ Analyze a current policy/scheme related to disability rights or inclusive education in India and present key features.</li> </ul> </li> <li>8. <b>Video or Documentary Analysis</b> <ul style="list-style-type: none"> <li>○ Watch and critically review a video/documentary focusing on children with exceptionalities, highlighting support systems and societal challenges.</li> </ul> </li> <li>9. <b>Mock Individualized Education Plan (IEP) Preparation</b> <ul style="list-style-type: none"> <li>○ Draft an IEP for a hypothetical child with special needs based on observed or provided case data.</li> </ul> </li> <li>10. <b>Develop a Directory of Resources</b> <ul style="list-style-type: none"> <li>○ Compile a list of organizations, schools, and digital tools that support children with special needs in India.</li> </ul> </li> </ol>	
<b>Pedagogy:</b>	<ul style="list-style-type: none"> <li>• Powerpoint Presentations</li> <li>• Songs/Videos/Documentaries/Movies</li> <li>• Interactive Activities (Role Play, Puzzles, Games, etc.)</li> <li>• Observation &amp; Report Writing</li> <li>• In-Class discussions &amp; debates</li> </ul>	
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (5<sup>th</sup> Ed.). Washington, DC: American Psychiatric Association.</li> <li>2. Gargiulo, R. M. (2015). Special education in contemporary society: An introduction to exceptionality (5<sup>th</sup> Ed.). New York: Sage.</li> <li>3. Hallahan, D. P., Kauffman, J. M., &amp; Pullen, P. C. (2013). Exceptional learners: An introduction to special education (12<sup>th</sup> Ed.). Boston, MA: Pearson Education.</li> <li>4. Hardman, M. L., Egan, M. W., &amp; Drew, C. J. (2017). Human exceptionality: School, community, and family (12th ed.). Boston, MA: Cengage Learning.</li> <li>5. Heward, W. L. (2013). Exceptional children: An introduction to special education (10<sup>th</sup> ed.). Boston, MA: Pearson Education.</li> <li>6. Kharge, M. T. (2014). Rights of persons with disabilities bill, 2014. Retrieved from <a href="http://www.prsindia.org/uploads/media/Person%20with%20Disabilities/The%20Right%20of%20Persons%20with%20Disabilities%20Bill.pdf">http://www.prsindia.org/uploads/media/Person%20with%20Disabilities/The%20Right%20of%20Persons%20with%20Disabilities%20Bill.pdf</a></li> <li>7. Mangal, S. K. (2007). Exceptional Children: An Introduction to Special Education. New Delhi: Prentice Hall of India</li> <li>8. Srivastava, P., &amp; Kumar, P. (2015). Disability, its issues and challenges: psychosocial and legal aspects in Indian scenario. Delhi Psychiatry Journal, 18(1), 195-205.</li> </ol>	
<b>Course Outcomes:</b>	<p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Define and describe various intellectual and learning disabilities including dyslexia, dysgraphia, and dyscalculia.</li> <li>2. Explain the characteristics and challenges of children with chronic health problems such as epilepsy, cancer, diabetes, HIV/AIDS, and asthma.</li> <li>3. Identify and describe different types of speech and language disorders.</li> <li>4. Analyze the impact of communication disorders on learning and social integration.</li> <li>5. Define assistive technology and its importance in special education.</li> <li>6. Classify various types of assistive technologies used for different exceptionalities.</li> <li>7. Evaluate the role of assistive technology in enhancing learning outcomes for children with special needs.</li> <li>8. Assess the availability and implementation of assistive technologies in the Indian context.</li> </ol>	

9. Examine issues of accessibility to basic services for individuals with exceptionalities in India.
10. Critically analyze current challenges and policies related to exceptionality and inclusion in India.
11. Apply observation and documentation techniques to assess the needs and support strategies for individuals with exceptionalities.
12. Design inclusive learning tools and evaluate assistive technologies that support accessibility and special education in practical contexts.

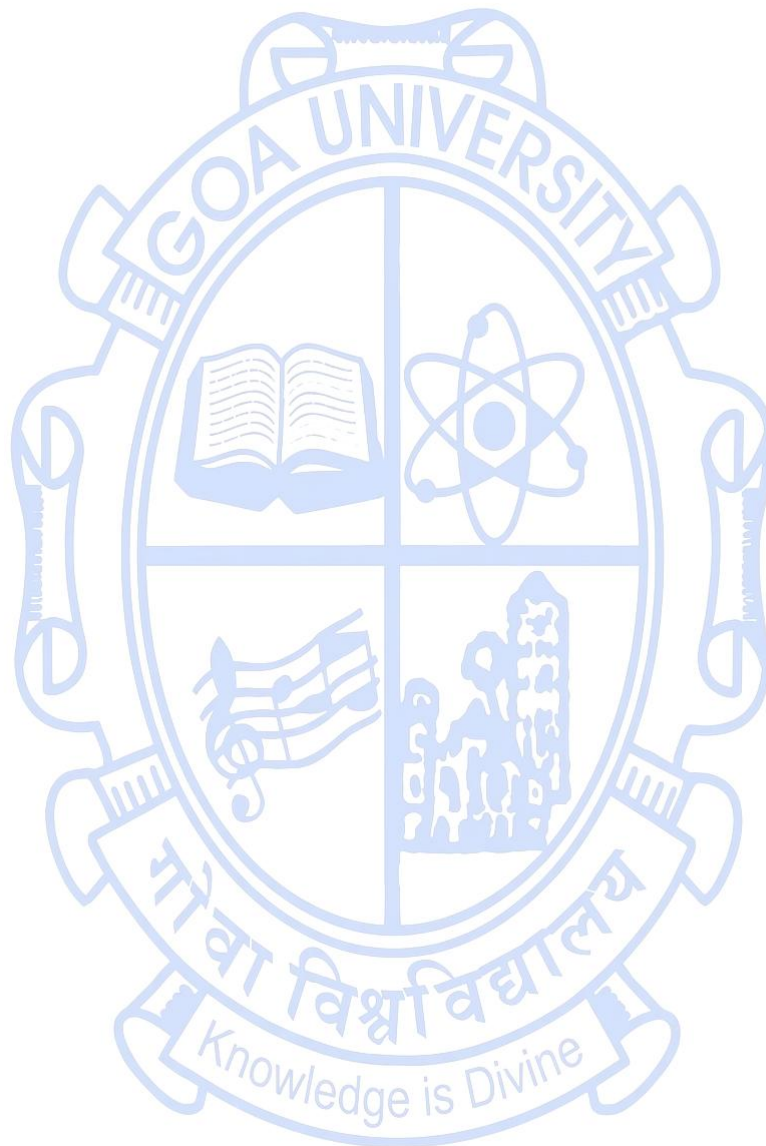


**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSH-322  
**Title of the Course** : **Creating Developmentally Appropriate Curriculum (V)**  
**Number of Credits** : 3T+1P  
**Effective from AY** : 2025-26

<b>Pre-requisites for the Course:</b>	Completed SY BSc Home Science	
<b>Course Objectives:</b>	<ol style="list-style-type: none"> <li>1. To provide students with training in curriculum planning for education settings, particularly early childhood education settings.</li> <li>2. To enable students to plan developmentally-appropriate educational and recreational activities for early childhood years.</li> <li>3. To facilitate students to engage in curriculum planning in educational settings, keeping in mind the learning objectives as also the classroom arrangement, classroom enrichment, role(s) of the child, role(s) of the teacher, transition activities, learning centres, and balance in the daily and weekly schedules. [SEP]</li> </ol>	
		<b>No. of hours</b>
	<p><b>Unit I – Foundations of Curriculum in Early Childhood Care and Education</b></p> <ul style="list-style-type: none"> <li>• Definition and meaning of curriculum in the context of early childhood education (ECE)</li> <li>• Importance and role of curriculum in the overall educational process</li> <li>• Key components of an effective and developmentally appropriate ECE curriculum</li> <li>• Overview and significance of the National Curriculum Framework (NCF), with reference to the Foundational Stage</li> </ul>	<b>5</b>
	<p><b>Unit II – Models of Early Childhood Education Curriculum</b></p> <ul style="list-style-type: none"> <li>• Exploration of major curriculum models and pedagogical approaches in ECE:             <ul style="list-style-type: none"> <li>○ Montessori Method</li> <li>○ Bank Street Approach</li> <li>○ Head Start Program</li> <li>○ Reggio Emilia Approach</li> <li>○ Rudolf Steiner/Waldorf Education</li> <li>○ Te Whāriki (New Zealand)</li> <li>○ Thematic/Project Approach</li> <li>○ Glenn Doman Method</li> </ul> </li> <li>• Discussion on contemporary innovations and emerging trends in ECE curriculum models</li> </ul>	<b>20</b>
	<p><b>Unit III – Curriculum Planning and Assessment in ECE</b></p> <ul style="list-style-type: none"> <li>• Types of curriculum: Integrated, play-based, theme-based, emergent, and structured curricula</li> <li>• Theme-based curriculum planning and content development</li> <li>• Emphasizing child, family, and community as integral parts of curriculum design</li> <li>• Planning and documentation of curriculum:             <ul style="list-style-type: none"> <li>○ Setting general goals and instructional objectives</li> <li>○ Preparing written plans: Daily, weekly, short-term, and long-term</li> <li>○ Developing units, lesson plans, and activity schedules</li> </ul> </li> <li>• Assessment as a tool for curriculum improvement:             <ul style="list-style-type: none"> <li>○ Assessment strategies catering to diverse learning styles and domains (cognitive, social, emotional, physical)</li> <li>○ Role of teachers, families, and other stakeholders in assessment</li> <li>○ Importance of observation and documentation in everyday settings</li> <li>○ Minimizing bias and the ‘halo effect’ in assessment practices</li> </ul> </li> </ul>	<b>15</b>

	<b>Unit IV – Special Considerations in Curriculum Planning</b> <ul style="list-style-type: none"> <li>• Incorporating field trips and experiences beyond the classroom</li> <li>• Engaging resource persons and community experts</li> <li>• Designing and organizing learning centres to support active exploration</li> <li>• Strategies for promoting parental involvement in early learning and curriculum implementation</li> </ul>	5
<b>Content:</b>	<b>Practical Work</b> <ul style="list-style-type: none"> <li>• Collaborative brainstorming, discussion, and written planning of developmentally appropriate curriculum activities</li> <li>• Presentations and reviews of various curriculum models and their application</li> <li>• Field visits to ECE centres or preschools implementing different curriculum approaches</li> <li>• Critical evaluation of curriculum practices in selected pre-primary institutions in Goa</li> </ul>	30
<b>Pedagogy:</b>	<ul style="list-style-type: none"> <li>• Workshops</li> <li>• Powerpoint Presentations</li> <li>• Interactive Activities</li> <li>• Videos</li> <li>• Field Trips</li> </ul>	
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Bruce, T. (2015). <i>Early childhood education</i> (5th ed.). London: Hodder Education.</li> <li>2. Catron, C. E. &amp; Allen, J. (2015). <i>Early Childhood Curriculum: A Creative Play Model</i>, 4<sup>th</sup> Ed.</li> <li>3. Edwards, C., Gandini, L., &amp; Forman, G. (2012). <i>The hundred languages of children: The Reggio Emilia experience in transformation</i> (3rd ed.). Santa Barbara, CA: Praeger.</li> <li>4. Essa, E. L. (2019). <i>Introduction to early childhood education</i> (8th ed.). Boston: Cengage Learning.</li> <li>5. Goffin, S. G., &amp; Washington, V. (2007). <i>Ready or not: Leadership choices in early care and education</i>. New York: Teachers College Press.</li> <li>6. Govinda, R. (Ed.). (2008). <i>India education report: Progress of school education in India</i>. New Delhi: Oxford University Press.</li> <li>7. Isenberg, J. P. &amp; Durham, J. L. (20 ). <i>Creative Materials and Activities for the Early Childhood Curriculum</i>.</li> <li>8. Kaul, V. (2019). <i>Early childhood education and care: Policy and practice</i>. New Delhi: Oxford University Press.</li> <li>9. Mohite, P. (2006). <i>Early childhood care and education</i>. New Delhi: Concept Publishing Company.</li> <li>10. NAEYC. (2009). <i>Developmentally appropriate practice in early childhood programs serving children from birth through age 8</i>. Washington, DC: National Association for the Education of Young Children.</li> <li>11. NCERT. (2005). <i>National Curriculum Framework 2005</i>. New Delhi: National Council of Educational Research and Training.</li> <li>12. NCERT. (2022). <i>National Curriculum Framework for Foundational Stage</i>. New Delhi: National Council of Educational Research and Training.</li> <li>13. Raina, K. (2012). <i>Early childhood education: Theory and practice</i>. New Delhi: Sarup Book Publishers.</li> <li>14. Roopnarine, J. L., &amp; Johnson, J. E. (2017). <i>Approaches to early childhood education</i> (6th ed.). Boston: Pearson.</li> <li>15. Schweinhart, L. J., &amp; Weikart, D. P. (1997). <i>Lasting differences: The High/Scope Preschool Curriculum Comparison study through age 23</i>. Ypsilanti, MI: High/Scope Press.</li> <li>16. Swaminathan, M., &amp; Daniel, P. (2004). <i>Educational practices and early childhood education</i>. New Delhi: NCERT.</li> </ol>	
<b>Course Outcomes:</b>	Students will be able to: <ol style="list-style-type: none"> <li>1. Define key concepts related to curriculum and early childhood education.</li> </ol>	

2. Explain the role and importance of curriculum in preschool education.
3. Illustrate various early childhood curriculum models through examples.
4. Apply principles of theme-based and emergent curriculum planning.
5. Develop daily, weekly, and long-term curriculum plans for preschoolers.
6. Analyze components of an effective and developmentally appropriate curriculum.
7. Evaluate different curriculum models implemented in early childhood settings.
8. Design integrated activities addressing multiple developmental domains.
9. Assess curriculum implementation using observation and feedback tools.
10. Propose strategies for enhancing curriculum through parental and community involvement.



**SEMESTER VII**

**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSH-401  
**Title of the Course** : **Advances in Theories of Human Development**  
**Number of Credits** : **4 (3 Theory + 1 Practical)**  
**Effective from AY** : **2026-27**

<b>Pre-requisites for the Course:</b>	TY BSc – Home Science – Human Development and Family Studies	
<b>Course Objectives:</b>	<ol style="list-style-type: none"> <li>1. To introduce students to advanced theoretical perspectives in the field of human development</li> <li>2. To help students analyse theoretical perspectives</li> <li>3. To assist students to evaluate the application of the theories to contemporary times</li> </ol>	
<b>Content:</b>		<b>No of hours</b>
	<b>Unit 1 – Introduction and Overview</b> a) Overview of the course Concepts/definitions of theories, models, paradigms b) Structure of scientific revolutions (Thomas Kuhn) c) Role of a theory in advancement of knowledge d) Process of theory development	<b>5</b>
	<b>Unit 2 - Classic Theories of Development: The Psychoanalytical Perspective Sigmund Freud</b> a) Overview of key concepts b) Advanced study of psychosexual development c) Advanced study of the unconscious (primary literature) – i) Justification for the concept of the unconscious ii) The dynamics of repression d) Psychoanalysis & Role of the unconscious in psychoanalysis - Illustration using one of Freud’s case histories (primary literature) e) Major criticisms; major contributions	<b>10</b>
	<b>Unit 2 - Classic Theories of Development: Carl Gustav Jung</b> a) Overview of key ideas b) The personal and impersonal/collective nature of human personality (the collective unconscious, ego, shadow, anima, animus, persona, archetypes) c) Jungian perspective of the unconscious: the collective unconscious; related ideas such as synchronicity, significance of dreams, and, symbolism in art and religion (primary literature) d) Major criticisms; major contributions	<b>10</b>
	<b>Unit 3 - Classic Theories of Development: Erik Erikson</b> a) Overview of key ideas b) The epigenetic chart and psychosocial stages (primary literature) c) Major criticisms; major contributions	<b>10</b>
	<b>Unit 4 - Contemporary Theories of Human Behaviour and Development: Life Span Approaches</b> a) Paul B. Baltes and associates (primary literature) b) Life-span theories: key concepts and five levels of analysis i. Development as selection/specialization and selective optimization in adaptive capacity ii. Development as gain/loss dynamic iii. Plasticity c) Major criticisms; major contributions	<b>10</b>
<b>Practical Work</b> <ol style="list-style-type: none"> <li>1. Personal reflection and self-evaluation sheets based on various theoretical perspectives</li> </ol>	<b>30</b>	

	<ol style="list-style-type: none"> <li>2. Biographical sketches to be compiled for each theorist with a focus on their career progression</li> <li>3. Reading up and presenting news and magazine articles related to the theoretical perspectives</li> <li>4. Conduct of Experiments related to certain theories with the relevant age groups</li> <li>5. Evaluation of videos/documentaries related to theory</li> </ol>
<b>Pedagogy:</b>	<ul style="list-style-type: none"> <li>• In-Class discussions &amp; debates</li> <li>• Pre-reading of primary literature and Journal articles for flipped classroom style interactions</li> <li>• Powerpoint Presentations</li> <li>• Videos</li> <li>• Interactive Activities (Role Play, Puzzles, Games, etc.)</li> <li>• Report Writing</li> </ul>
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Baldwin, A. (1980). Theories of child development (2<sup>nd</sup> Ed.). New York: Wiley.</li> <li>2. Crain, W. (2016). Theories of development: Concepts and applications (6<sup>th</sup> Ed). New York: Routledge. Green, M., &amp; Piel, J. A. (2016).</li> <li>3. Theories of human development: A comparative approach (2<sup>nd</sup> Ed). New York: Routledge.</li> <li>4. Lerner, R. M. (2015). Concepts and theories of human development (3<sup>rd</sup> Ed.). New York: Routledge.</li> <li>5. Newman, B. M., &amp; Newman, P. R. (2015). Theories of human development (2<sup>nd</sup> Ed.). Hove, UK: Psychology Press.</li> <li>6. Salkind, N. J. (2004). An introduction to theories of human development. New York: Sage.</li> <li>11. Thomas, R. M. (2004). Comparing theories of child development. (6<sup>th</sup> Ed.). Boston, MA: Cengage Learning.</li> <li>12. Thomas, R. M. (2000). Recent theories of human development. New York: Sage.</li> <li>13. Berk, L.E. (2007). Development through the Lifespan (4<sup>th</sup> Ed). NY: Pearson Education Inc.</li> <li>14. Craig, G. J. (1999). Human Development. NJ: Prentice-Hall, Inc.</li> </ol>
<b>Course Outcomes:</b>	<p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Understand themselves and their own development in a more detailed way.</li> <li>2. Understand the various theoretical perspectives that shaped the science of human development.</li> <li>3. Explore the biographical background of theorists' lives to see what may have influenced their thoughts.</li> <li>4. Analyse critically the pros and cons of the perspectives.</li> <li>5. Apply the theories to their own lives and check their relevance in contemporary times.</li> </ol>

**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSH-402  
**Title of the Course** : Issues & Trends in Human Development  
**Number of Credits** : 4 (3 Theory + 1 Practical)  
**Effective from AY** : 2026-27

<b>Pre-requisites for the Course:</b>	TY BSc – Home Science – Human Development and Family Studies Ability to comprehend and analyse simple concepts 1. Openness to new perspectives 2. Respect for differing viewpoints
<b>Course Objectives:</b>	1. To introduce students to a variety of issues related to human development and family life 2. To assist students to form their own opinions and evaluate the opinions of others with respect to the issues & trends under discussion 3. To encourage students to develop a larger perspective of problems & issues discussed
<b>Content:</b>	<b>No of hours</b>
	<p><b>Unit 1 – Issues &amp; Trends in Work-Family Interface</b></p> <p><b>a) Family and Work Interface:</b> Changing employment patterns, changing family demographics, changing gender ideologies, &amp; changing organizational responsiveness to work and family issues.</p> <p><b>b) Impact of employment on families:</b></p> <ul style="list-style-type: none"> <li>– Spousal employment and relationship to marital stability and satisfaction</li> <li>– Impact of mother’s employment on children’s wellbeing</li> <li>– Impact of parental employment and poverty on children; child’s participation in family work</li> <li>– Impact of the organization of work life</li> </ul> <p><b>c) Effects of family on work:</b></p> <ul style="list-style-type: none"> <li>– Multiple roles in the family and workplace: Emotional well-being, role enrichment, role stress and role strain</li> <li>– Individual coping strategies</li> <li>– Institutional change to promote work-life balance: The Mommy Track; Part-Time Work; Home-based employment; flextime; work-from-home; unpaid family leave; dependent care assistance; paid family leave; shorter standard work weeks; supervisor training; Counselling and educational programs; improvements in job conditions/pay</li> </ul>
<p><b>Unit 2 – Issues Related to Marital Dissolution</b></p> <p><b>a) Divorce: Antecedents, causes, or predictors of divorce</b></p> <ul style="list-style-type: none"> <li>– Macro-level antecedents: demographic factors, legal factors, cultural/attitudinal factors)</li> <li>– Micro-level antecedents: social exchange theory, vulnerability-stress-adaptation, cascade theory, other individual risk factors of divorce</li> </ul> <p><b>b) Theoretical models of the divorce process:</b></p> <ul style="list-style-type: none"> <li>– Six levels or stations of divorce</li> <li>– Divorce as a process of mourning</li> <li>– Divorce as a psychological &amp; psychosocial process</li> </ul> <p><b>c) Consequences of divorce on children and adults:</b></p> <ul style="list-style-type: none"> <li>– Legal, psychological and emotional, and economic consequences of divorce for parents</li> <li>– Consequences for parenting, inter-parental relationships, disruptions in parent-child relationships</li> <li>– Child maladjustment to pre-separation marital conflict and violence</li> </ul>	

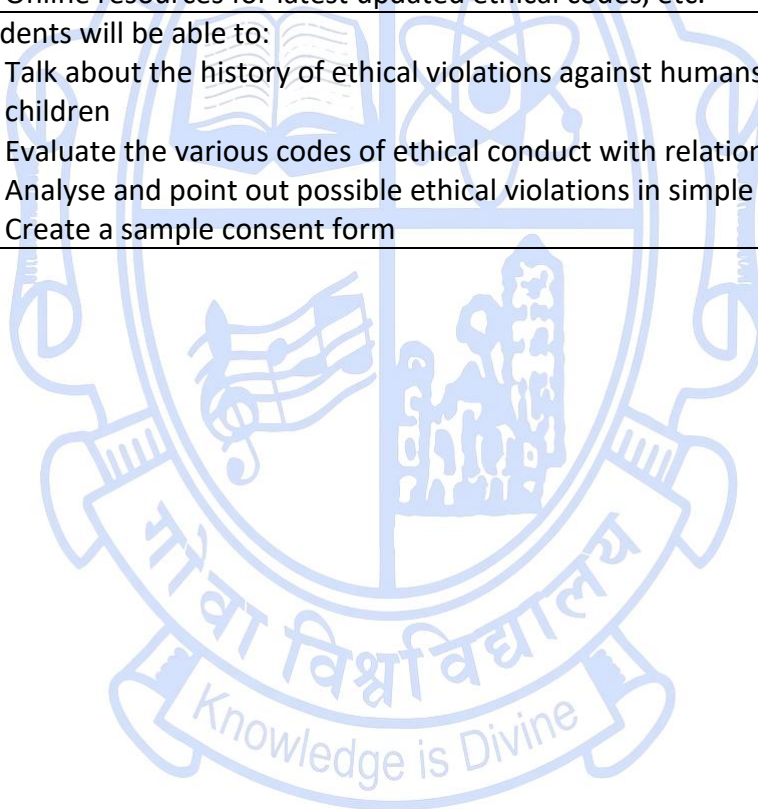
	<p><b>d) Marital separation, annulments, widowhood</b></p> <p><b>Unit 3 - Issues &amp; Trends in Changing Families</b></p> <p>a) Development of children and adolescents in two-parent families with low conflict vs. high conflict</p> <p>b) Development of children and adolescents in single-parent families: divorced single mothers, single mothers by choice, single fathers</p> <p>c) Development of children and adolescents in stepfamilies</p> <p>d) Development of children and adolescents in the context of parental cohabitation</p> <p>e) Issue: Is marriage/re-marriage advantageous for children?</p> <p>f) Development of children in assisted reproduction families - "High-Tech" families (IVF and ICSI), Surrogacy families</p> <p><b>Unit 4: Trends &amp; Issues in Families in Contemporary Society</b></p> <p>a) Social Networking – impact on dating, marriage, and family life</p> <p>b) The Nuclear Family (decreasing size, role clarity) – challenges</p> <p>c) Families with same-sex/transgender parents</p> <p>d) Skipped Generation Families</p> <p>e) Family life in the future</p> <p><b>Practical Work</b></p> <p>1. Visit organizations that encourage/allow work-life balance/child-care options/leave/family benefits.</p> <p>2. Speak to some of the following:</p> <ul style="list-style-type: none"> <li>- Couple from a Dual-income family</li> <li>- Older child in a dual-income family</li> <li>- Family Court Lawyer</li> <li>- Marriage counsellor</li> <li>- Child Therapist</li> <li>- Grandparent (skipped generation family if possible)</li> </ul> <p>3. Visit organizations that work with families/address their various needs.</p> <p>4. Read and compile/discuss articles/videos/documentaries related to above.</p>	<p><b>10</b></p> <p><b>15</b></p> <p><b>30</b></p>
<p><b>Pedagogy:</b></p>	<ul style="list-style-type: none"> <li>• Powerpoint Presentations</li> <li>• Audio aids/Video aids</li> <li>• Interactive Activities (Role Play, Puzzles, Games, etc.)</li> <li>• Observation &amp; Report Writing</li> <li>• In-Class discussions &amp; debates</li> </ul>	
<p><b>References/ Readings:</b></p>	<ol style="list-style-type: none"> <li>1. Bernades, J. (1997). <i>Family studies: An introduction</i>. Oxford, UK: Routledge.</li> <li>2. Bengston, V. L., Acock, A. C., Allen, K. R., Dilworth-Anderson, P., &amp; Klein, D. M. (Eds.) (2005). <i>Sourcebook of family theory &amp; research</i>. New Delhi: Sage.</li> <li>3. Golombok, S., &amp; Tasker, F. (2015). Socioemotional development in changing families. In R. M.</li> <li>4. Lerner (Series Ed.) &amp; M. E. Lamb (Vol. Ed.), <i>Handbook of child psychology and developmental science, Vol. 3: Socioemotional processes</i> (pp. 419-463). New York, NY: Wiley.</li> <li>5. Gottman, J. (1998). <i>Why marriages succeed or fail: And how you can make yours last</i>. New York: Simon &amp; Schuster.</li> <li>6. Gottman, J. (2002). <i>The relationship cure: A 5 step guide to strengthening your marriage, family, and friendships</i>. New York: Three Rivers.</li> <li>7. Gottman, J., &amp; Silver, N. (2000). <i>Seven principles for making marriage work: A practical guide from the country's foremost relationship expert</i>. New York: Three Rivers.</li> </ol>	

	<ol style="list-style-type: none"> <li>8. Hines, M. (2015). Gendered development. In R. M. Lerner (Series Ed.) &amp; M. E. Lamb (Vol. Ed.), <i>Handbook of child psychology and developmental science, Vol. 3: Socioemotional processes</i> (pp. 657-700). New York, NY:Wiley.</li> <li>9. Kumar, A. (2006). <i>Women and family welfare</i>. New Delhi: Anmol Publications.</li> <li>10. Lamb, M. E. (Vol. Eds.) Lerner, R. M. (Series Ed.) (2015). <i>Handbook of child psychology and developmental science. Vol. 3: Socioemotional processes</i>. Hoboken, NJ: Wiley.</li> <li>11. Price, S. J., McKenry, P. C., &amp; Murphy, M. J. (Eds.) (2000). <i>Families across time: A life course perspective (Readings)</i>. Los Angeles: Roxbury.</li> <li>12. Roy, P. K. (2003). <i>Family diversity in India: Patterns, practices and ethos</i>. New Delhi: Gyan.</li> <li>13. Shireman, J. F. (2003). <i>Critical issues in child welfare</i> (2<sup>nd</sup> Ed.). New York: Columbia University Press.</li> <li>14. Steel, L., Kidd, W., &amp; Brown, A. (2001). <i>The family</i> (2<sup>nd</sup> Ed.). London: Palgrave Macmillan.</li> <li>15. Sussman, M. B., &amp; Steinmetz, S. K. (Eds.) (1987). <i>Handbook of marriage and family</i>. New York, NY: Springer.</li> <li>16. Sussman, M. B., Steinmetz, S. K., &amp; Peterson, G. W. (1999). <i>Handbook of Marriage and the family</i> (2<sup>nd</sup> Ed.). New York, NY: Plenum.</li> <li>17. Turner, L. H., &amp; West, R. (Eds.) (2006). <i>The family communication sourcebook</i>. New Delhi: Sage.</li> <li>18. Walker, A. J. (1999). Gender and family relationships. In M. B. Sussman, S. K. Steinmetz, &amp; G. W. Peterson, <i>Handbook of marriage and the family</i> (2<sup>nd</sup> Ed.). New York, NY: Plenum Press.</li> <li>19. Wallace, H. (2002). <i>Family violence: Legal, medical and social perspectives</i>. Boston: Allyn &amp; Bacon.</li> <li>20. Walsh, F. (Ed.) (2002). <i>Normal family processes: Growing diversity and complexity</i>. New York: Guilford.</li> <li>21. Wigfield, A., Eccles, J. S., Fredricks, J. A., Simpkins, S., Roeser, R. W., &amp; Schiefele, U. (2015). Development of achievement motivation and engagement. In R. M. Lerner (Series Ed.) &amp; M. E. Lamb (Vol. Ed.), <i>Handbook of child psychology and developmental science, Vol. 3: Socioemotional processes</i> (pp. 657-700). New York, NY: Wiley.</li> </ol>
<p><b>Course Outcomes:</b></p>	<p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Discuss and debate about a variety of issues related to human development and family life.</li> <li>2. Form their own opinions and evaluate the opinions of others with respect to the issues &amp; trends under discussion.</li> <li>3. See problems of human and family life from a larger perspective.</li> <li>4. Understand and critique journal articles and news reports related to issues discussed.</li> <li>5. Fathom the depth and complexity of issues related to human development and family life.</li> </ol>

**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSH-403  
**Title of the Course** : Ethics in Research and Human Development  
**Number of Credits** : 4 (3 Theory + 1 Practical)  
**Effective from AY** : 2026-27

<b>Pre-requisites for the Course:</b>	TY BSc – Home Science – Human Development and Family Studies	
<b>Course Objectives:</b>	<ol style="list-style-type: none"> <li>To create awareness among students about the history of ethical violations against humans, with special reference to children</li> <li>To help students examine the various codes of ethical conduct with relation to research with humans</li> <li>To assist students to analyse and point out possible ethical violations in simple research studies</li> </ol>	
<b>Content:</b>		<b>No of hours</b>
	<b>Unit 1 – Historical Antecedents of Ethics in Research with Human Subjects</b> a) Why research with human subjects? b) History of ethical violations (war-crimes, medical experiments, drug trials, organ-trade, etc.) c) Special situations where ethical violations are common (for example, pandemics)	<b>10</b>
	<b>Unit 2 – Popular Codes of Ethics in Human Service Professions (Medical Trials, Social Sciences, etc.)</b> a) Nuremberg Code b) Belmont Report c) ICMR Ethical Guidelines d) APA Guidelines e) Any other guidelines of major bodies f) Main Ethical Considerations	<b>10</b>
	<b>Unit 3 – Special Ethical Considerations in Research with Children and other Vulnerable Groups</b> a) Importance of research with children b) Why special considerations for research with children c) Research with Various other vulnerable groups d) Ethical Issues & Challenges (remuneration, obtaining consent, etc.)	<b>10</b>
	<b>Unit 4 – Protocols for Ethical Conduct of Research</b> (At each stage of Research Process – avoiding plagiarism, informed consent, data privacy, etc.) a) Plagiarism in research b) Ethical problems with used of online AI tools c) Informing about the purpose of research d) Obtaining Consent (informed consent, withdrawal at any stage, etc.) e) Experimental/Intervention research (balancing control group/experimental group benefits) f) Privacy and confidentiality of data g) Data storage and access h) Special considerations with digital data i) Communication of results of research j) Research Publication Ethics	<b>15</b>
	<b>Practical Work</b> <ol style="list-style-type: none"> <li>Interview with a doctor or nurse or counsellor or researcher (human subjects) to understand their views on ethics and the ethical problems they face time and again.</li> <li>Reflect on aspects of a code of ethics.</li> </ol>	<b>30</b>

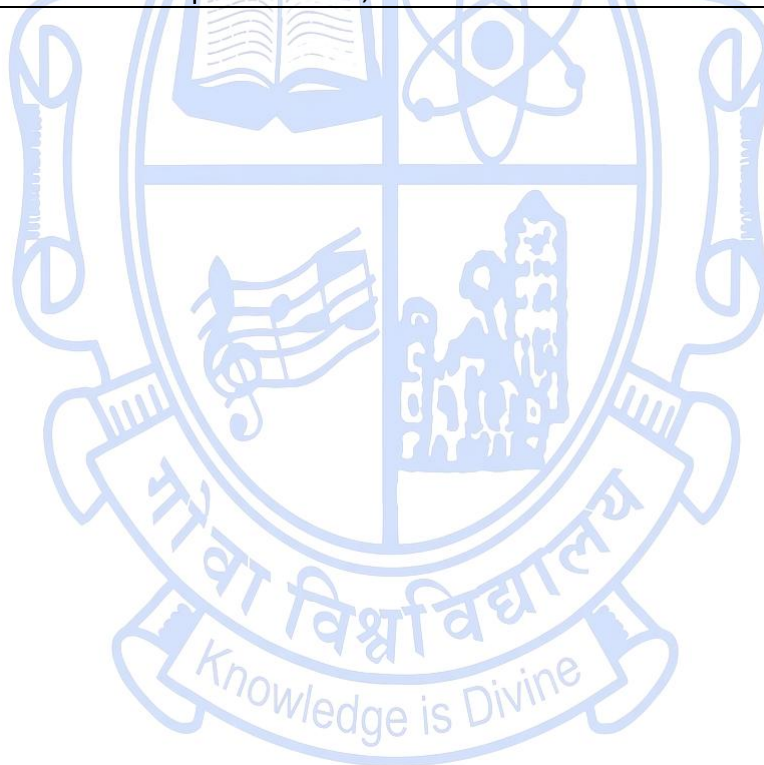
	<ol style="list-style-type: none"> <li>3. Evaluate some popular research studies in the field of psychology (for example, Little Albert experiment) keeping in mind research ethics.</li> <li>4. Examine and evaluate pre-existing consent forms.</li> <li>5. Create a sample consent form.</li> <li>6. Visit to a research centre that conducts research with a variety of people.</li> </ol>	
<b>Pedagogy:</b>	<ul style="list-style-type: none"> <li>• Powerpoint Presentations</li> <li>• Audio aids/Video aids</li> <li>• Interactive Activities (Role Play, Puzzles, Games, etc.)</li> <li>• Observation &amp; Report Writing</li> <li>• In-Class discussions &amp; debates</li> </ul>	
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Dwiwedi, R. S. (1997). <i>Research Methods in Behavioral Sciences</i>. Delhi: Macmillan India.</li> <li>2. Kerlinger, F. N. &amp; Lee, H. B. (2000). <i>Foundations of Behavioral Research</i>. Orlando, Florida: Harcourt.</li> <li>3. Leong, F.T.L., &amp; Austin, J. T. (Eds.) (1996). <i>The Psychology Research Handbook</i>. New Delhi: Sage.</li> <li>4. Resnik, D.B. (2019). <i>The Ethics of Research with Human Subjects</i>. Springer International Publishing AG. <a href="https://doi.org/10.1007/978-3-319-68756-8">https://doi.org/10.1007/978-3-319-68756-8</a></li> <li>5. Sales, B.D. and Folkman, S. (2000) (Eds.). <i>Ethics in research with Human Participants</i>. American Psychological Association. ISBN: 978-1-55798-688-7</li> <li>6. Online resources for latest updated ethical codes, etc.</li> </ol>	
<b>Course Outcomes:</b>	<p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Talk about the history of ethical violations against humans, with special reference to children</li> <li>2. Evaluate the various codes of ethical conduct with relation to research with humans</li> <li>3. Analyse and point out possible ethical violations in simple research studies</li> <li>4. Create a sample consent form</li> </ol>	



**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSH-411  
**Title of the Course** : **Behavioural & Emotional Challenges In Children**  
**Number of Credits** : **4 (3 Theory + 1 Practical)**  
**Effective from AY** : 2026-27

<b>Pre-requisites for the Course:</b>	TY BSc – Home Science – Human Development and Family Studies	
<b>Course Objectives:</b>	<ol style="list-style-type: none"> <li>1. To introduce students to various behavioural &amp; emotional challenges in children.</li> <li>2. To familiarize students with the importance of early identification and intervention.</li> <li>3. To enable students to apply different intervention strategies to help children who face behavioural &amp; emotional challenges.</li> </ol>	
<b>Content:</b>		<b>No. of hours</b>
	<b>Unit 1: Introduction to Behavioural &amp; Emotional Challenges</b> <ol style="list-style-type: none"> <li>a. Overview of behavioural and emotional challenges in children</li> <li>b. Factors influencing children's behaviour and emotional well-being: Attachment, Parenting style, Family structure, Societal influences, Neurobiological factors, Major life events, Media</li> <li>c. Importance of early identification and intervention</li> <li>d. Understanding normal developmental milestones, Identifying deviations from typical development, Examining the impact of temperament on behaviour</li> </ol>	<b>10</b>
	<b>Unit 2: Common Behavioural &amp; Emotional Challenges in Children</b> <ol style="list-style-type: none"> <li>a. Behavioural Challenges: Oppositional Defiant Disorder (ODD), Conduct Disorder (CD), Attention Deficit/Hyperactivity Disorder (ADHD), Impulse control and aggression, Tantrums</li> <li>b. Emotional Challenges: Anxiety disorders in children, Depression in children, Trauma and its impact on emotional well-being</li> </ol>	<b>15</b>
	<b>Unit 3: Intervention Strategies</b> <ol style="list-style-type: none"> <li>a. Behavioral interventions for challenging behaviors: Functional Behaviour Assessment, Positive Reinforcement, Token Economy, Behaviour Contracts</li> <li>b. Cognitive-behavioral interventions for emotional challenges: Cognitive restructuring, Mindfulness, Social Skills Training, Relaxation techniques, Creative therapy</li> <li>c. Collaborative approaches involving families, schools, and communities: Parent Training &amp; Support, Individualized Education Plan (IEP), Multidisciplinary team meetings</li> </ol>	<b>20</b>
	<b>Practical Work</b> <ol style="list-style-type: none"> <li>1. Interview a caregiver of a child who has behavioural or emotional problem and prepare a report with possible future interventions.</li> <li>2. Observe parenting style in a real-life setting (e.g., at a park) and discuss its impact on the behaviour of the child</li> <li>3. Invite an experienced speaker to discuss the importance of early identification and intervention.</li> <li>4. Roleplay scenario depicting various strategies to deal with children who have emotional and behavioural problems</li> <li>5. Design a token economy system for a specific behavioural challenge.</li> <li>6. Conduct a mindfulness and relaxation workshop for students and explore how these techniques can be applied to emotional challenges.</li> <li>7. Create an Individualized Education Plan (IEP) for a fictional case.</li> </ol>	<b>30</b>
<b>Pedagogy:</b>	<ul style="list-style-type: none"> <li>• Powerpoint Presentations</li> <li>• Songs/Videos</li> </ul>	

	<ul style="list-style-type: none"> <li>• Interactive Activities (Role Play, Puzzles, Games, etc.)</li> <li>• Observation &amp; Report Writing</li> <li>• In-Class discussions &amp; debates</li> </ul>
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Zions, P., Zions, L., &amp; Simpson, R. L. (2016). <i>Emotional and Behavioral Problems: A Handbook for Understanding &amp; Handling Students</i>. Skyhorse Publishing.</li> <li>2. Clough, P; Pardeck, J., Yuen, F.(eds) (2005) <i>Handbook of Emotional and Behavioural difficulties</i>. New Delhi, Sage Publications.</li> <li>3. American Psychiatric Association. (2013). <i>Diagnostic and statistical manual of mental disorders (5th ed.)</i>. Washington, DC: American Psychiatric Association.</li> <li>4. Gargiulo, R. M. (2015). <i>Special education in contemporary society: An introduction to exceptionality (5th ed.)</i>. New York: Sage.</li> <li>5. Sanders, M. R. (2018). <i>Handbook of Parenting and Child Development Across Lifespan</i>. Springer Science Business Media.</li> </ol>
<b>Course Outcomes:</b>	<p>At the end of this course, students will be able to:</p> <ol style="list-style-type: none"> <li>1. Develop a comprehensive understanding of various emotional and behavioural problems in children.</li> <li>2. Understand the importance of preventive measures and early intervention strategies to address and mitigate emotional and behavioural problems in children.</li> <li>3. Develop evidence-based intervention plans and implement strategies for addressing emotional and behavioural problems in children.</li> <li>4. Collaborate effectively with diverse stakeholders, including parents, educators, and mental health professionals, to address children's emotional and behavioural needs.</li> </ol>

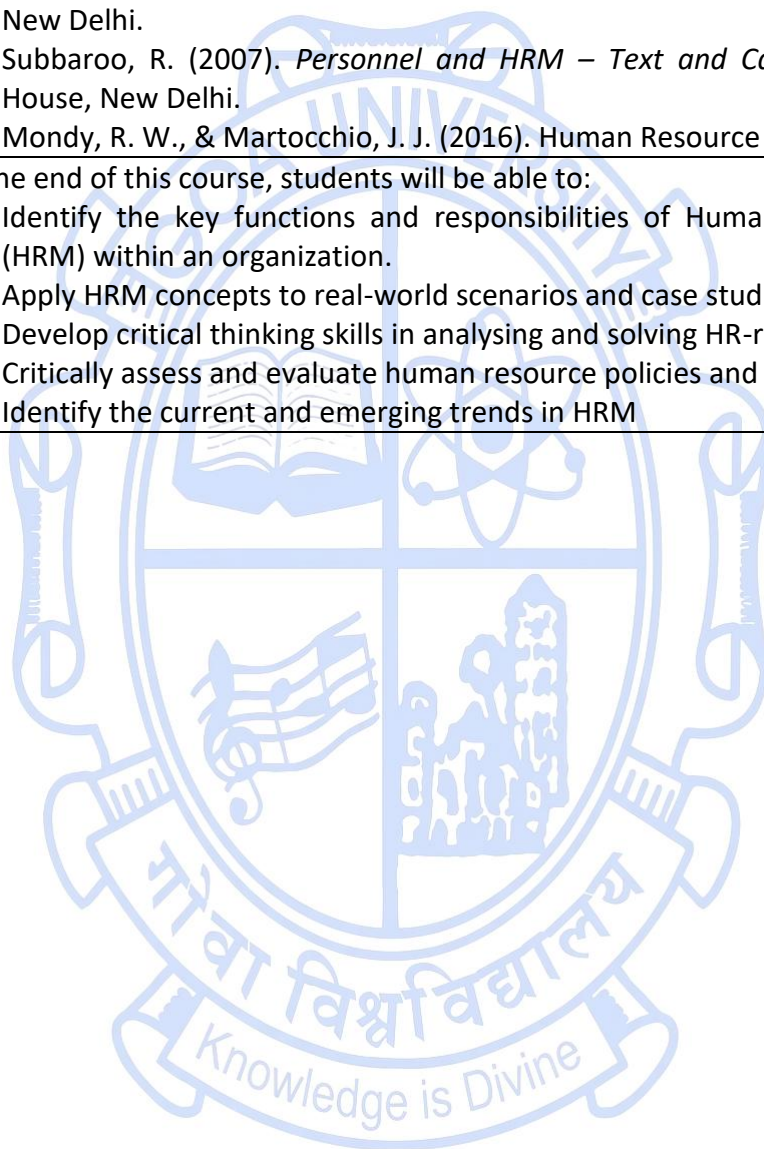


**SEMESTER VIII**

**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSH-404  
**Title of the Course** : HUMAN RESOURCE MANAGEMENT  
**Number of Credits** : 4 (3 Theory + 1 Practical)  
**Effective from AY** : 2026-27

<b>Pre-requisites for the Course:</b>	1. TY BSc – Home Science – Human Development and Family Studies	
<b>Course Objectives:</b>	1. To familiarize the students with the key functions and responsibilities of Human Resource Management (HRM) within an organization. 2. To enable students to apply HRM concepts to analyse and solve real-world HR challenges. 3. To introduce the students to the emerging trends & policies in HRM.	
<b>Content:</b>		<b>No. of hours</b>
	<b>Unit 1: Introduction to Human Resource Management</b> a. Concept, scope and significance b. Organisation theories c. Human resource development and its challenges	<b>5</b>
	<b>Unit 2: Function of Human Resource Management</b> a. Manpower planning b. Job analysis – job description and job specification c. Recruitment, selection and placement: Recruitment methods and sources, Selection techniques: interviews, assessments, and testing, Diversity in recruitment d. Performance appraisal and development: Performance appraisal methods, Goal setting and feedback, Performance improvement plans e. Basics of employee compensation: Wage and salary structures, Employee benefits and incentives, Compensation strategies, Pay equity and fairness f. Training and development: Training needs analysis, Training methods and techniques, Evaluating training effectiveness g. Motivation: Theories of Motivation	<b>20</b>
	<b>Unit 3: Human Resources Audit</b> a. Concept and importance of HR audit b. HR audit process and methodologies	<b>5</b>
	<b>Unit 4: Current Trends in Human Resource Management</b> a. Remote work & Hybrid models b. Employee well-being & mental health c. Technology integration d. Reverse mentoring	<b>15</b>
	<b>Practical Work</b> 1. Collect job advertisements and perform job analysis Design a resume. 2. Develop interview skills. 3. Conduct a mock recruitment process, including job analysis, creating job descriptions and specifications. 4. Interview an HR professional. 5. Evaluate the compensation and benefits offered by 5 various companies. 6. Implement a 360-degree feedback process for students such that each student receives feedback from peers, instructors, and self-assessment. 7. Design a training program for a specific organizational need (e.g., soft-skills for employees, team-building, leadership development, time/stress management).	<b>30</b>

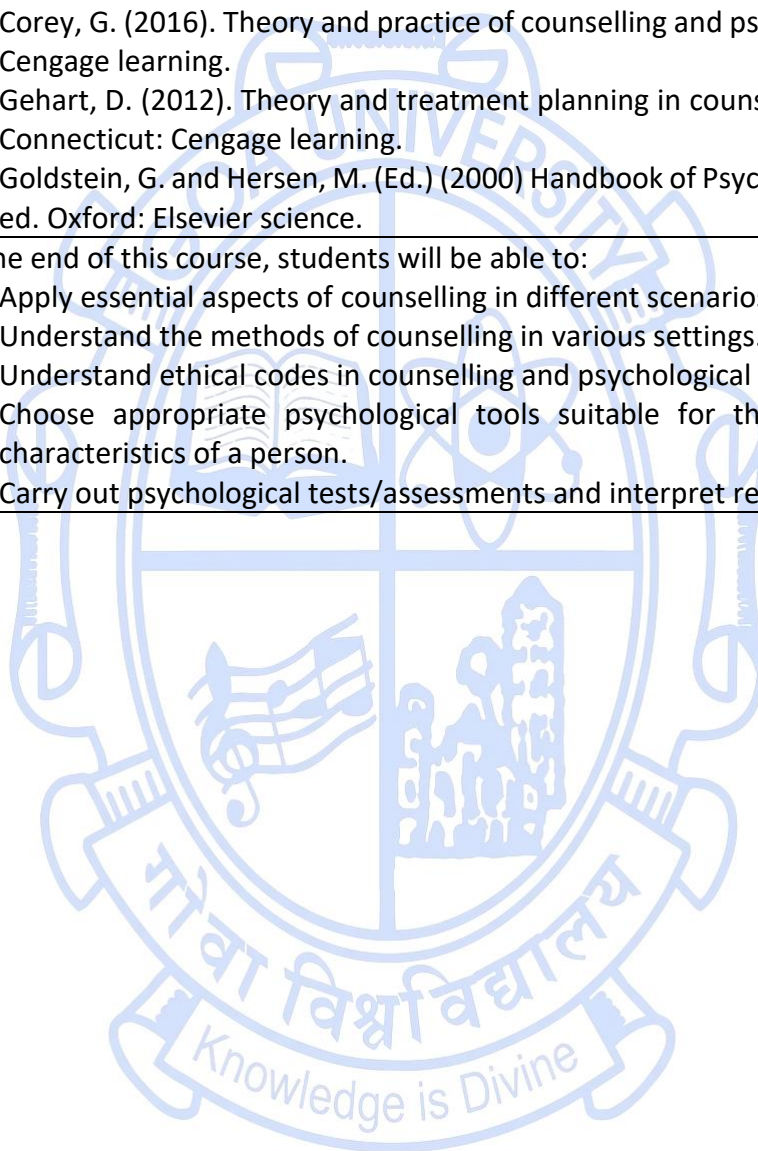
	8. Conduct an HR audit, identifying strengths, weaknesses, and areas for improvement of a real or hypothetical organization. 9. Identify and present best practices in HR. 10. Visit to a company/organization that has a well-functioning HR department.
<b>Pedagogy:</b>	<ul style="list-style-type: none"> <li>• Powerpoint Presentations</li> <li>• Songs/Videos</li> <li>• Interactive Activities (Role Play, Puzzles, Games, etc.)</li> <li>• Observation &amp; Report Writing</li> <li>• In-Class discussions &amp; debates</li> </ul>
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Aswathappa. K, (2008). <i>Human Resource and Personnel Management - Text and Cases</i>. Tata McGraw-Hill Publishing Company Ltd, New Delhi.</li> <li>2. Gary Dessler (2006). <i>Human Resource Management</i>. Prentice Hall of India Pvt. Ltd, New Delhi.</li> <li>3. Subbaroo, R. (2007). <i>Personnel and HRM – Text and Cases</i>. Himalaya Publishing House, New Delhi.</li> <li>4. Mondy, R. W., &amp; Martocchio, J. J. (2016). <i>Human Resource Management</i>. Pearson.</li> </ol>
<b>Course Outcomes:</b>	<p>At the end of this course, students will be able to:</p> <ol style="list-style-type: none"> <li>1. Identify the key functions and responsibilities of Human Resource Management (HRM) within an organization.</li> <li>2. Apply HRM concepts to real-world scenarios and case studies.</li> <li>3. Develop critical thinking skills in analysing and solving HR-related problems.</li> <li>4. Critically assess and evaluate human resource policies and practices.</li> <li>5. Identify the current and emerging trends in HRM</li> </ol>



**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSH-405  
**Title of the Course** : **COUNSELLING AND PSYCHOLOGICAL TESTING**  
**Number of Credits** : **4 (3 Theory + 1 Practical)**  
**Effective from AY** : **2026-27**

<b>Pre-requisites for the Course:</b>	TY BSc – Home Science – Human Development and Family Studies	
<b>Course Objectives:</b>	<ul style="list-style-type: none"> <li>To introduce students to important concepts and approaches in counselling.</li> <li>To familiarize students with the various assessment approaches and tools.</li> <li>To enable students to acquire competencies in the administration, scoring and interpretation of selected psychological tests.</li> </ul>	
<b>Content:</b>		<b>No. of hours</b>
	<b>Unit 1: Introduction to Psychological Testing</b> <ol style="list-style-type: none"> <li>Meaning, Historical Overview of Psychological Testing</li> <li>Types of tests: Individual and group tests, Speed and power tests, Verbal and non-verbal tests, Performance tests</li> <li>Characteristics of psychological tests (reliability, validity, analysis, test construction, test administration)</li> <li>Selection of appropriate tests</li> <li>Reporting psychological assessment</li> <li>Ethical Principles in Psychological Testing</li> </ol>	<b>10</b>
	<b>Unit 2: Assessment of Development, Intelligence, Personality, Aptitude &amp; Interest</b> <ol style="list-style-type: none"> <li>Developmental Assessment of Young Children: Brazelton Neonatal Assessment Scale (BNAS/NBAS), Bayley Scales of Infant and Toddler Development (BSID), Vineland's Social Maturity Scale</li> <li>Assessment of Intelligence and Creativity: Binet-Kamat Test, Wechsler's scales (WAIS, WISC, WPPSI), Kaufman's Assessment Battery, Torrance Tests of Creative Thinking, Passi Test of Creativity, Raven's Progressive Matrices</li> <li>Assessment of Personality: EPPS, MBTI, Cattell's 16PF</li> <li>Assessment of Interests and Aptitudes for Vocational Guidance: Strong Interest Vocational Blank, Kuder Occupational Interest Survey, Holland's Self-Directed Search, David's Battery of Differential Abilities</li> </ol>	<b>20</b>
	<b>Unit 3: Approaches to Counselling</b> <ol style="list-style-type: none"> <li>Cognitive Behavioural Therapy (CBT): Concepts, Techniques, Application</li> <li>Gestalt Approach: Concepts, Techniques, Application</li> <li>Solution-Focussed Therapy: Concepts, Techniques, Application</li> <li>Reality Therapy: Concepts, Procedure, Application</li> <li>Eclectic Counselling: Concepts, Role of the counsellor, Techniques, Application</li> <li>Career Counselling: Models, Techniques, Application</li> <li>Code of Ethics for counsellors</li> </ol>	<b>15</b>
	<b>Practical Work</b> <ol style="list-style-type: none"> <li>Organize a field visit to a counselling centre, mental health clinic, or community organization that provides counselling services.</li> <li>Conduct role-playing scenarios where students apply the techniques learnt in different counselling approaches</li> <li>Analyse cases studies, identify the stages of counselling, and discuss the appropriate counselling interventions.</li> <li>Group discussions where students analyse ethical dilemmas related to counselling scenarios</li> <li>Selection of appropriate tests in different scenarios</li> </ol>	<b>30</b>

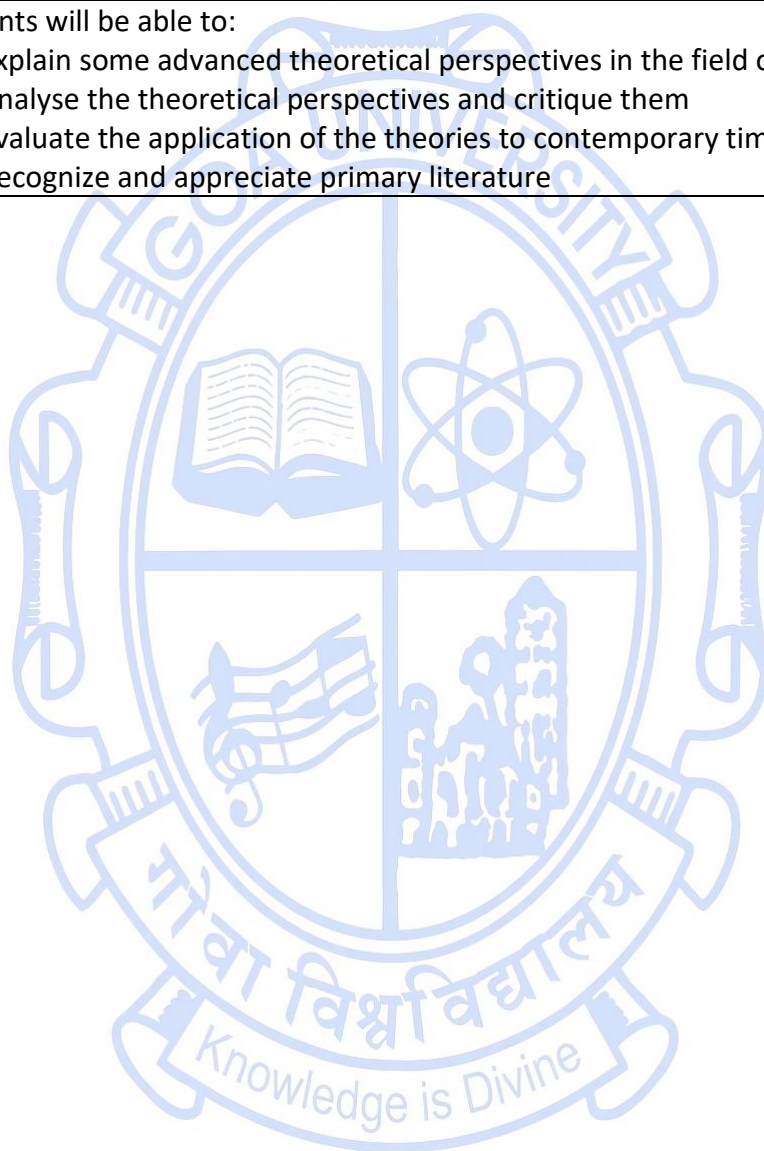
	6. Administer psychological tests and provide a report of the results
<b>Pedagogy:</b>	<ul style="list-style-type: none"> <li>• Powerpoint Presentations</li> <li>• Videos</li> <li>• Interactive Activities (Role Play, Puzzles, Games, etc.)</li> <li>• Observation &amp; Report Writing</li> <li>• In-Class discussions &amp; debates</li> </ul>
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Anastasi, A., &amp; Urbina, S. (1997). Psychological testing (7th ed.). New Jersey: Prentice-Hall.</li> <li>2. Black, M. M., &amp; Matula, K. (2000). Essentials of Bayley scales of infant development II assessment. NY: Wiley.</li> <li>3. Capazzi, D &amp; Cross, D. (2014). Counselling and psychotherapy: Theories and interventions. New Jersey: Prentice –Hall.</li> <li>4. Corey, G. (2016). Theory and practice of counselling and psychotherapy. Connecticut: Cengage learning.</li> <li>5. Gehart, D. (2012). Theory and treatment planning in counselling and psychotherapy. Connecticut: Cengage learning.</li> <li>6. Goldstein, G. and Hersen, M. (Ed.) (2000) Handbook of Psychological Assessment. 3rd. ed. Oxford: Elsevier science.</li> </ol>
<b>Course Outcomes:</b>	<p>At the end of this course, students will be able to:</p> <ol style="list-style-type: none"> <li>1. Apply essential aspects of counselling in different scenarios.</li> <li>2. Understand the methods of counselling in various settings.</li> <li>3. Understand ethical codes in counselling and psychological testing.</li> <li>4. Choose appropriate psychological tools suitable for the assessment of various characteristics of a person.</li> <li>5. Carry out psychological tests/assessments and interpret results.</li> </ol>



**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSH-406  
**Title of the Course** : **Advanced Study of Theories of Human Behaviour and Development**  
**Number of Credits** : **4 (3 Theory + 1 Practical)**  
**Effective from AY** : **2026-27**

<b>Pre-requisites for the Course:</b>	TY BSc – Home Science – Human Development and Family Studies	
<b>Course Objectives:</b>	<ol style="list-style-type: none"> <li>1. To introduce students to advanced theoretical perspectives in the field of human development</li> <li>2. To help students analyse the theoretical perspectives and critique them</li> <li>3. To assist students to evaluate the application of the theories to contemporary times</li> <li>4. To introduce students to primary literature and help them to appreciate the primary writing of theorists</li> </ol>	
<b>Content:</b>		<b>No of hours</b>
	<b>Unit 1 - Classic Theories of Development: Growth of Thought and Language - Jean Piaget</b> <ol style="list-style-type: none"> <li>a) Biological presuppositions and epistemological conclusions</li> <li>b) Illustration of the epigenetic point of view</li> <li>c) Advanced study of assimilation and accommodation</li> <li>d) Factors of development</li> <li>e) Stages of cognitive development</li> <li>f) Major criticisms; major contributions</li> </ol>	<b>15</b>
	<b>Unit 2 – Classic Theories of Development: Growth of Thought and Language - Lev S. Vygotsky</b> <ol style="list-style-type: none"> <li>1. Development of thought and language</li> <li>2. Key generalizations about development</li> <li>3. Major criticisms; major contributions</li> </ol>	<b>10</b>
	<b>Unit 3 - Classic Theories of Development: Growth of Morality - Lawrence Kohlberg</b> <ol style="list-style-type: none"> <li>1. Overview of key ideas</li> <li>2. Stages of moral development</li> <li>3. Major criticisms; major contributions</li> </ol>	<b>10</b>
	<b>Unit 4 - Contemporary Theories of Human Behaviour and Development: Systemic Approaches - Esther Thelen and Linda B. Smith</b> <ol style="list-style-type: none"> <li>1. Key ideas in Dynamic Systems Theories</li> <li>2. Principles of development</li> <li>3. Major criticisms; major contributions</li> </ol>	<b>10</b>
	<b>Practical Work</b> <ol style="list-style-type: none"> <li>1. Analyse the benefits and limitations in various theoretical perspectives.</li> <li>2. Identify the gaps in the theoretical perspectives that can generate future research.</li> <li>3. Biographical sketches to be compiled for each theorist with a focus on their career progression.</li> <li>4. Reading up and presenting news and magazine articles related to the theoretical perspectives.</li> <li>5. Conduct of Experiments related to certain theories with the relevant age groups.</li> <li>6. Evaluation of videos/documentaries related to theory.</li> </ol>	<b>30</b>
<b>Pedagogy:</b>	<ul style="list-style-type: none"> <li>• Powerpoint Presentations</li> <li>• Audio aids/Video aids</li> <li>• Interactive Activities (Role Play, Puzzles, Games, etc.)</li> <li>• Observation &amp; Report Writing</li> <li>• In-Class discussions &amp; debates</li> </ul>	

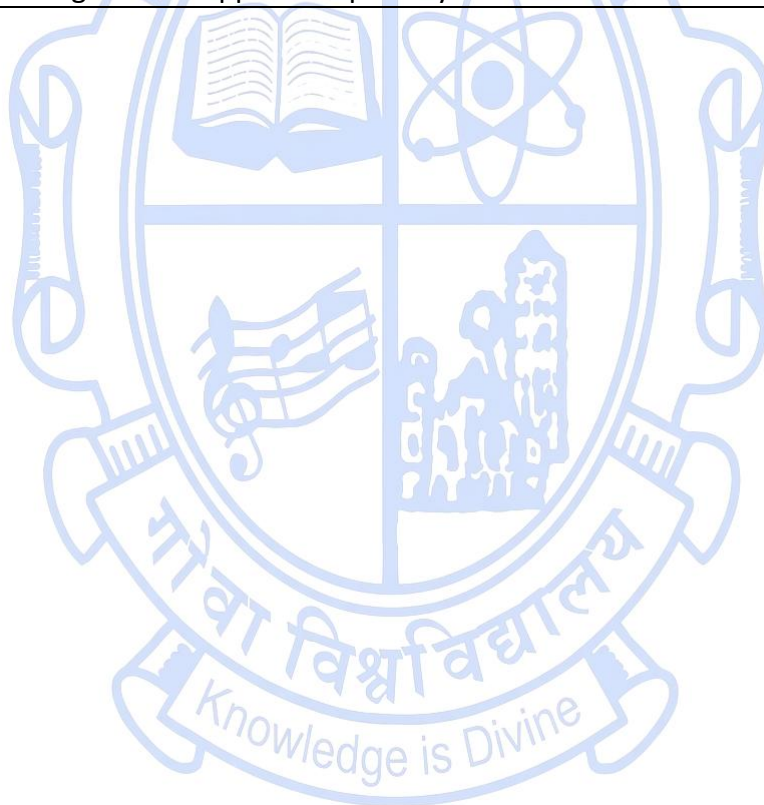
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Baldwin, A. (1980). <i>Theories of Human Development</i>. New York: Wiley</li> <li>2. Damon, W. (Series Ed.) (2006). <i>Handbook of Child Psychology</i>.</li> <li>3. Lerner, R. M. (Vol. Ed.) <i>Volume one: Theoretical Models of Human Development</i>. NY: John Wiley.</li> <li>4. Green, M. (1989). <i>Theories of Human Development: A Comparative Approach</i>. New Jersey: Prentice Hall.</li> <li>5. Lerner, R. M. (2001). <i>Concepts and Theories of Human Development</i>. Psychology Press.</li> <li>6. Mussen, P. H. (Ed.). (1983). <i>Handbook of Child Psychology. Vol.1: History, Theory and Methods</i>. New York: John Wiley.</li> <li>7. Newman &amp; Newman. <i>Theories of Human Development</i>.</li> <li>8. Thomas, M. (2000). <i>Comparing Theories of Child Development</i>. (5<sup>th</sup> Ed.). California: Belmont.</li> </ol>
<b>Course Outcomes:</b>	<p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Explain some advanced theoretical perspectives in the field of human development</li> <li>2. Analyse the theoretical perspectives and critique them</li> <li>3. Evaluate the application of the theories to contemporary times.</li> <li>4. Recognize and appreciate primary literature</li> </ol>



**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSH-407  
**Title of the Course** : Research Methods and Statistics (SPSS)  
**Number of Credits** : 4 (3 Theory + 1 Practical)  
**Effective from AY** : 2026-27

<b>Pre-requisites for the Course:</b>	TY BSc – Home Science – Human Development and Family Studies	
<b>Course Objectives:</b>	1. To introduce students to simple data entry and analysis in MS Excel and SPSS. 2. To demonstrate creation of variables, and entry of data in SPSS. 3. To demonstrate creation of simple graphs via MS Excel. 4. To help students analyse and interpret statistical results.	
<b>Content:</b>		<b>No of hours</b>
	<b>Unit 1 – Introduction and overview</b> a) Role of statistics in (quantitative) research b) Definition/changing conceptions c) Prerequisite concepts in mathematics (e.g., properties of the summation sign, basic algebra)	<b>5</b>
	<b>Unit 2 - Descriptive Statistics for summarizing ratio level variables</b> Frequencies and percentages a) Computing an average/measure of central tendency: Mean, median, mode(s) b) Contrasting the mean vs. median c) Computing an average when there are outliers or extreme values in the data set d) Robust measures of the center (5% trimmed mean; M estimators) Quartiles and percentiles e) Computing a measure of variability or dispersion. Why? (inadequacy of the mean) f) Minimum value and maximum value – Theoretical Range, Actual Range, Interquartile range, Variance and standard deviation g) Discrete and continuous variables h) Histograms and line graphs	<b>20</b>
	<b>Unit 3 - Demonstration of computer software such as the Statistical Package for the Social Sciences (SPSS)</b> a) Data entry b) Data Management c) Descriptive Statistics	<b>20</b>
	<b>Practical Work</b> 1. Calculation of mean, median, mode. 2. Data entry in SPSS 3. Running of simple descriptive statistics in SPSS 4. Interpreting statistics and writing out results	<b>30</b>
<b>Pedagogy:</b>	<ul style="list-style-type: none"> <li>• Powerpoint Presentations</li> <li>• Audio aids/Video aids</li> <li>• Interactive Activities (Role Play, Puzzles, Games, etc.)</li> <li>• Observation &amp; Report Writing</li> <li>• In-Class discussions &amp; debates</li> </ul>	
<b>References/ Readings:</b>	1. Bhattacharyya, G. K. & Johnson, R. A. (1977). <i>Statistical concepts and methods</i> . New York, NY: John Wiley. 2. Denzin, N. K., & Lincoln, Y. S. (2011). <i>The Sage handbook of qualitative research</i> . Thousand Oaks, CA: Sage.	

	<ol style="list-style-type: none"> <li>3. Fraenkel, J. R., &amp; Wallen, N. E. (2006). <i>How to design and evaluate research in education</i> (6<sup>th</sup> Ed.). New York, NY: McGraw-Hill.</li> <li>4. Jackson, S. L. (2012). <i>Research methods and statistics: A critical thinking approach</i> (4<sup>th</sup> Ed.). Wadsworth Cengage Learning.</li> <li>5. Johnson, R. A., &amp; Bhattacharyya, G. K. (2011). <i>Statistics: Principles and methods</i> (6th ed.). New York, NY: John Wiley.</li> <li>6. Patton, M. Q. (2002). <i>Qualitative research &amp; evaluation methods</i> (3<sup>rd</sup> Ed.). Thousand Oaks, CA: Sage.</li> <li>7. Kachigan, S. K. (1986). <i>Statistical analysis: An interdisciplinary introduction to univariate &amp; multivariate methods</i>. Radius Pr.</li> <li>8. Kerlinger, F. N. &amp; Lee, H. B. (2000). <i>Foundations of behavioral research</i>. Orlando, Florida: Harcourt.</li> <li>9. Leong, F.T.L. &amp; Austin, J. T. (Eds.) (2006). <i>The psychology research handbook: A guide for graduate students and research assistants</i> (2<sup>nd</sup> Ed.). Thousand Oaks, CA: Sage.</li> <li>10. Rubin, A., &amp; Babbie, E. R. (2011). <i>Research methods for social work</i> (7<sup>th</sup> Ed.). Belmont, CA: Thomson, Brooks/Cole.</li> </ol>
<b>Course Outcomes:</b>	<p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Explain some advanced theoretical perspectives in the field of human development</li> <li>2. Analyse the theoretical perspectives and critique them</li> <li>3. Evaluate the application of the theories to contemporary times.</li> <li>4. Recognize and appreciate primary literature</li> </ol>



**Name of the Programme** : B.Sc. Home Science  
**Course Code** : HSH-412  
**Title of the Course** : Media for Human Development  
**Number of Credits** : 4 (2 Theory + 2 Practical)  
**Effective from AY** : 2026-27

<b>Pre-requisites for the Course:</b>	TY BSc – Home Science – Human Development and Family Studies	
<b>Course Objectives:</b>	<ol style="list-style-type: none"> <li>To understand the role of media for Human development.</li> <li>To explore the variety of media options that can be used to enhance and enrich the process of development and learning.</li> <li>To learn how to design and create media for a variety of ages and needs in the lifespan.</li> <li>To evaluate the existing media available and improvise based on human development learnings.</li> </ol>	
<b>Content:</b>		<b>No of hours</b>
	<b>Unit 1 – Perspectives on Media</b> a) Definition, theories b) Applicability of Media to Human Development (education, empowerment, development, environment, awareness, advocacy for disability, human rights, etc.) c) Various constraints in the use of media d) Mass Communication - Elements, Characteristics, Models and Scope	<b>10</b>
	<b>Unit 2 – Evolution of Media Use</b> a) Traditional Media: Puppetry, Folk Songs, Folk Theatre, fairs b) Print Media- Books, Newspapers, Magazines, Leaflets and Pamphlets c) Electronic Media - Radio, Television, Video, Computer Based Technologies d) Digital Media – Websites, Reels, Text Messages, Chats, Streaming Services, E-books, Apps, Online Games, Etc. e) Outdoor Media-Exhibition, Fairs and Kiosks, Bulletin Boards, Hoardings, Public Displays (Transport Stations, Graffiti, etc.)	<b>10</b>
	<b>Unit 3 - Effects of Excessive Media Use</b> a) Repercussions on various age groups b) Addiction and developmental psychopathologies	<b>5</b>
	<b>Unit 4 – Ethics in Media</b> a) Freedom of Speech, Expression and Social responsibility b) Political and Government Controls on the Media	<b>5</b>
	<b>Practical Work</b> <b>1. Guidelines for &amp; Creation of the following in relation to Human Development</b> a) Bulletin Board Content b) Newsletters (Children, Youth, Adults) c) Children’s newspaper d) Activity Tablemats e) Comic strips (Manual & Digital) f) Story Writing for different ages g) Creative Writing & Content Writing h) Infographics i) Blogs and Vlogs j) Interactive videos k) Designing posters and pamphlets (Manual & Digital) l) Critics m) Writing a Column/Article n) Agony Aunt Column	<b>25</b>

	2. <b>Evaluation &amp; Review of Content &amp; Appropriateness of Various Media</b> (and learning how to improvise: eg: change story endings)	<b>05</b>
<b>Pedagogy:</b>	<ul style="list-style-type: none"> <li>• Powerpoint Presentations</li> <li>• Audio aids/Video aids</li> <li>• Interactive Activities (Role Play, Puzzles, Games, etc.)</li> <li>• Observation &amp; Report Writing</li> <li>• In-Class discussions &amp; debates</li> <li>• Practical work of creation of media</li> </ul>	
<b>References/ Readings:</b>	<ol style="list-style-type: none"> <li>1. Bhatia <u>Arun</u> (2005), Media and Communication Ethics, Akanksha Publishing.</li> <li>2. Calvert, S. L., &amp; Jordan, A. B. (Eds.) (2001). Children in the digital age. Journal of Applied Developmental Psychology, 22, 3–5.</li> <li>3. Gandhi <u>Ved Prakash</u> (2004), Mass Media And Communication Strategies- 2 Edition, KANIska Publication.</li> <li>4. Greenfield, P. M. (1993). Representational competence in shared symbol systems: Electronic media from radio to video games. In R. R. Cocking, &amp; K. A. Renninger (Eds.), The development and meaning of psychological distance (pp. 161–183). Hillsdale: Erlbaum.</li> <li>5. Ivers Karen S (2009), A Teacher's Guide to Using Technology in the Classroom, Libraries Unlimited</li> <li>6. Asamen Joy Keiko , et al. (2008), The Sage Handbook of Child Development, Multiculturalism, and Media, Sage Publications (CA)</li> <li>7. Evra Judith Page Van (2004), Television and Child Development, Routledge publication</li> </ol>	
<b>Course Outcomes:</b>	<p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Justify the contribution of media use for human development</li> <li>2. Use variety of media to enhance and enrich the process of development and learning.</li> <li>3. Design and create media for a variety of ages and needs in the lifespan.</li> <li>4. Critically analyze/evaluate existing media and (ethically) improvise.</li> </ol>	

