

**SIDDHARTH UNIVERSITY KAPILVASTU
SIDDHARTH NAGAR (U. P.)**

**B.Sc. Home Science
Faculty of Science**



**Syllabus Structure CBCS (NEP)
B.Sc. HOMESCIENCE
(3Years Degree Program)**

Semester-wise Distribution of Courses and credit of B.Sc. Home Science

Year	Course Code	Paper Title	Theory/Practical (Marks)	Credits	
Semester-I					
First Year	BHSC 111T	Fundamentals of Food & Human Physiology	Theory (50)	4	
	BHSC 111P	Practical	Practical (25)	2	
	BHSC 112T	Fundamentals of Extension Education and Human Development	Theory (50)	4	
	BHSC 112P	Practical	Practical (25)	2	
	BHSC 113T	Fundamentals of Textiles and Family Resource Management	Theory (50)	4	
	BHSC 113P	Practical	Practical (25)	2	
				Total Credits	18
	Semester-II				
	BHSC 121T	Nutrition Science & Food Preservation	Theory (50)	4	
	BHSC 121P	Practical	Practical (25)	2	
	BHSC 122T	Lifespan Development and Extension Programme Planning	Theory (50)	4	
	BHSC 122P	Practical	Practical (25)	2	
	BHSC 123T	Housing and Space Management	Theory (50)	4	
	BHSC 123P	Practical	Practical (25)	2	
			Total Credits	18	
Semester-III					
Second Year	BHSC 211T	Nutrition During Life Cycle	Theory (50)	4	
	BHSC 211P	Practical	Practical (25)	2	
	BHSC 212T	Extension Communication	Theory (50)	4	
	BHSC 212P	Practical	Practical (25)	2	
	BHSC 213T	Basics of Clothing Construction	Theory (50)	4	
	BHSC 213P	Practical	Practical (25)	2	
				Total Credits	18
	Semester-IV				
	BHSC 221T	Food Microbiology	Theory (50)	4	
	BHSC 221P	Practical	Practical (25)	2	
	BHSC 222	Entrepreneurship Development	Theory (50)	4	
	BHSC 222P	Practical	Practical (25)	2	
	BHSC 223T	Fabric Construction and Finishing	Theory (50)	4	
	BHSC 223P	Practical	Practical (25)	2	
			Total Credits	18	
Semester-V (Select any two groups from group 1-3)					
Third Year	Group 1				
	BHSC 311T	Food Science	Theory (75)	6	
	BHSC 312T	Therapeutic Nutrition	Theory (50)	4	
	BHSC 312P	Practical	Practical (25)	2	
				Total Credits	12
	Group 2				

	BHSC 313T	Early Childhood Care and Education	Theory (50)	4
	BHSC 313P	Practical	Practical (25)	2
	BHSC 314T	Extension Training Management	Theory (75)	6
			Total Credits	12
	Group 3			
	BHSC 315T	Family Economics and Consumer Education	Theory (75)	6
	BHSC 316T	Advance Garment Construction	Theory (50)	4
	BHSC 316P	Practical	Practical (25)	2
			Total Credits	12
	Semester VI (Select any two groups from group 1-3)			
	Group 1			
	BHSC 321T	Community Nutrition and Education	Theory (75)	6
	BHSC 322T	Food Service Management	Theory (50)	4
	BHSC 322P	Practical	Practical (25)	2
			Total Credits	12
	Group 2			
	BHSC 323T	Community Development	Theory (50)	4
	BHSC 323P	Practical	Practical (25)	2
	BHSC 324 T	Theories of Human Development	Theory (75)	6
			Total Credits	12
	Group 3			
	BHSC 325T	Traditional Textiles of India	Theory (75)	6
	BHSC 326T	Interior Designing and Decoration	Theory (50)	4
	BHSC 326P	Practical	Practical (25)	2
			Total Credits	12
			Grand Total	120

Marking Distribution out of 100

- **Subjects with Practical:** 25 Marks for Internal Assessment
25 Marks External Practical Exam
50 Marks Theory Paper
- **Subjects without Practical:** 25 Marks for Internal Assessment
75 Marks Theory paper

Home Science is a single discipline which equally empowers the individuals towards self-reliance as well as academic enrichment. Its interdisciplinary nature makes it a unique discipline which has countless entrepreneurial avenues to its graduates and at the same time it helps them to develop as a professional contributing in national development. The students are encouraged to develop a scientific temper. All the five windows of opportunity that Home Science offers for its recipients are i.e. Food and Nutrition, Human Development and family Studies, Family Resource Management, Extension and Communication Management and Textile and Clothing. In these courses, the students learn the fundamental principles and foundations of all the five areas. They are expected to internalize the principle of a Home Scientist, that is, to give back to the community from which they draw for sustainable development. This is a major contribution of Home Science in both developed and developing societies.

The objectives of the B.Sc. Home Science Program course:

1. To understand and appreciate the role of interdisciplinary sciences in the development and well-being of individuals, families and communities.
2. To learn about the science and technologies that enhance the quality of people’s life
3. To acquire professional and entrepreneurial skills for economic empowerment of the students in particular, and community in general.
4. To develop professional skills in food, nutrition, textiles, housing, product making, extension communication and human development.
5. To take science from the laboratory to the people.

PROGRAM SPECIFIC OUTCOME:

PO 1	Understand and appreciate the role of interdisciplinary sciences in the development and well- being of individuals, families and communities
PO 2	Understand the sciences and technologies that enhance the quality of life of people
PO 3	Acquire professional and entrepreneurial skills for economic empowerment of self in particular, and community in general
PO 4	Develop professional skills in food, nutrition, textiles, housing, product making, extension communication and human development.
PO 5	Take science from the laboratory to the people

B. Sc. First Year Semester I

Fundamentals of Food & Human Physiology

Programme: B.Sc. H. Sc.	Year: First	Semester: I
Course Code: BHSC-111T	Course Title: Fundamentals of Food& Human Physiology	
Course Outcomes: The student at the completion of the course will be able to: <ul style="list-style-type: none"> • Comprehend relationship between food, nutrition and health. • Understand the functions of food, basic concepts of food groups and balanced diet. • Understand the selection, nutritional contribution the commonly consumed foods. • Develop understanding about the methods of preparing food. • Gain the basic knowledge of human anatomy and physiology. • Explains structure and functions of cells, tissues and organs, systems of the human body • Provides excellent preparation for careers in the health professions and/or biomedical research. 		
Credits: 4T+2P	Core Compulsory	
Max. Marks: 100	Min.PassingMarks: As per UGC/University CBCS norms	
Total No. of Lectures- 90		
Units	Topic	No of Lectures
Part I		
I	<ul style="list-style-type: none"> • Concept of nutrition and health, define balanced diet, functional food, fortified food, • Relationship between food, nutrition and health 	06
II	<ul style="list-style-type: none"> • Functions of Food-Physiological, psychological and social • Food Groups and food guide pyramid and its importance, 	06
III	<ul style="list-style-type: none"> • Objectives of cooking, • Methods of cooking (Dry, moist and combination) with their merits and demerits 	08
IV	<ul style="list-style-type: none"> • Effect of cooking and heat on nutritive value of foods • Food adulteration: Definition, common adulterants in food and their effects on health 	08
Part II		
V	<ul style="list-style-type: none"> • Introduction to Human body: Organs, tissue and cell, cell structure, cellular organelles and their functions, skeletal system. • Blood – Composition and functions, 	08
VI	<ul style="list-style-type: none"> • Cardiovascular system: Structure and function of heart. • Respiratory System: structure and functions. 	08
VII	<ul style="list-style-type: none"> • Digestive system: organization and functions of digestive system 	08
VII	<ul style="list-style-type: none"> • Endocrine System: Overview of endocrine system. Functions of endocrine glands: Pituitary, Thyroid, Adrenal Glands, sex and Pancreatic hormones 	08

Practical BHSC-111P Credit: 2	<ul style="list-style-type: none"> • Identification and use of different kitchen items and equipment • Laboratory conduct and responsibilities • Knowledge of different food stuffs in English, Hindi and local language. • Different Styles of cutting fruits & vegetables • Table Setting • Weighing of Raw Ingredients • Preparation of Recipes using different methods of cooking • Preparation of nutrient rich dishes: Protein, carbohydrate, vitamins, minerals and fibers. • Determination of pulse rate in resting condition and after exercise (30 beats/10 beats method) • Determination of blood pressure by Sphygmomanometer (Auscultator method). • Detection of Blood group (Slide method). 	30
<p>Suggested Readings:</p> <p>Part 1</p> <ul style="list-style-type: none"> • Khanna K, Gupta S, Seth R, Mahna R, Rekhi T (2004). The Art and Science of Cooking: A Practical Manual, Revised Edition. Elite Publishing House Pvt Ltd. • Raina U, Kashyap S, Narula V, Thomas S, Suvira, Vir S, Chopra S (2010). Basic Food Preparation: A Complete Manual, Fourth Edition. Orient Black Swan Ltd. • Bamji MS, Krishnaswamy K, Brahmam GNV (2009). Textbook of Human Nutrition, 3rd edition. Oxford and IBH Publishing Co. Pvt. Ltd. • Srilakshmi (2007). Food Science, 4th Edition. New Age International Ltd. • Wardlaw and Insel MG, Insel PM (2004). Perspectives in Nutrition, Sixth Edition. • Mosby. Chadha R and Mathur P (eds). Nutrition: A Lifecycle Approach. Orient Blackswan, Delhi. 2015 • Dr Deepa Verma and Dr Rajeshwari Pandey (2021) Uicchposhanewammanavvikas (Advance Nutrition and human development), SahityaPrakashan • Dr. Vrindasingh, (2020). Aaharvigyanevamposhan (Dietetics & Nutrition) • Dr. Reena Khanuja, (2012).Aahar Evam Poshan Vigyan <p>Part 2</p> <ul style="list-style-type: none"> • Ganong WF (2014). Review of Medical Physiology, 24th ed. McGraw Hill. • Ross and Wilson (2013). Anatomy and Physiology in health and illness, 11th ed. Medical Division of Longman Group Ltd. • Guyton, A.C. and Hall, J.E.(2000)Textbook of Medical Physiology.10th ed. India: Harcourt Asia • Das, A.(2004)Medical Physiology-Vol. I and II 3rd Books and Allied (P) Ltd. • Tortora, G.J and Grabowski, S.R.(2000)Principles of Anatomy and Physiology.9th ed. John Wiley and Sons.Inc. • Chaudhari S K.(2000) Concise Medical Physiology.3rd Edition. Central. • Mahapatra, A.B.S.(2003):Essentials of Medical Physiology.3rd Edition. Current Books International. 		
<p>Suggested Continuous Evaluation Methods:</p> <ul style="list-style-type: none"> • Seminar/Presentation on any topic of the above syllabus • Test with multiple choice questions/short and long answer questions • Attendance 		

B.Sc. First Year Semester I

Fundamentals of Extension Education and Human Development

Programme: B.Sc. H. Sc.	Year: First	Semester: I
Course Code: BHSC-112T	Course Title: Fundamentals of Extension Education and Human Development	
Course Outcomes: The student at the completion of the course will be able to: <ul style="list-style-type: none"> • Gain knowledge on the need and importance of Extension Education and its significance in exchange of information • Understanding scope and importance of Home Science Extension Education • Gain knowledge on community development and its importance • Understanding basic concepts of education, teaching learning process and motivation • Get insight of meaning, domains and the multidisciplinary nature of human development. • Develop basic understanding of development from conception to old age. • Understand theoretical perspectives in human development. • Identify the principles guiding growth and development. • Comprehend different methods to study development in children. 		
Credits: 4T+2P	Core Compulsory	
Max.Marks: 100	Min.PassingMarks: As per UGC/University CBCS norms	
Total No. of Lectures-90		
Units	Topic	No of Lectures
Part I		
I	<ul style="list-style-type: none"> • Philosophy, components and scope of Home Science • The role of Home Science education for personal growth and professional development and National Development • Concept, Meaning and importance of Extension Education 	08
II	<ul style="list-style-type: none"> • Principles, objectives and philosophy of Extension Education • Types of Education, differences between formal, informal and non-formal education 	08
III	<ul style="list-style-type: none"> • Extension Education Process and steps • Extension worker- Role and Qualities of extension worker 	09
IV	<ul style="list-style-type: none"> • Teaching Learning process: Meaning and Definition • Elements and principles of learning • Motivation- meaning, definition, needs and types • Cone of experience 	05
Part II		
V	<ul style="list-style-type: none"> • Human Development: Definitions, Stages (prenatal and postnatal) and domains of development and its characteristics • Maturation and learning, heredity and environment 	04
VI	<ul style="list-style-type: none"> • Growth and Development: Definition, and difference between growth and development. • Principles of Development. 	10

VII	<ul style="list-style-type: none"> • Prenatal Development (stages of intra-uterine development) and stages of birth process • Prenatal influence on the fetus, biological risks, age of mother, illness, diet and nutrition, stress and emotional strain, environmental hazard 	08
VIII	<ul style="list-style-type: none"> • Types of delivery (natural, c-section and breech) • Child rearing practices- types and their effects 	08
Practical BHSC-112P Credit: 2	<ul style="list-style-type: none"> • Interaction with villagers and understand the felt and unfelt need • Visit to a community organization/women development and understand the organizational structure and Interact with the staff and understand their functions • Use Supportive techniques – secondary sources, direct observation, and semi structured interviews, case studies and stories, drama, games, role play, workshops etc. as per the situation • Develop common information materials • Organizing and evaluating programs for women and children at village level • Preparation of booklet on different stages and domain of life 	30

Suggested Readings:

Part 1

- Reddy A : Extension Education, Bapatia, India, Sri Laxmi Press
- WHO- Education for Health
- Gorges, Alan. Teaching Adults in Extension Education
- Ray, G. L. (2003), Extension Communication and Management. Kalyani Publishers.
- Dahama, O.P. and Bhatnagar, O.P. (2003). Education and Communication for Development. Oxford and IBH Publishing Co. Pvt. Ltd.
- Sandhu, A.S. (1993) Textbook on Agricultural Communication: Process and Methods. Oxford and IBH Publishing Co. Pvt. Ltd.
- Huma Zaidi. Introduction To Home Science. Omega Publications
- Manju Patni and Harplani. Prasar Siksha and Sanchar. Star Publications
- Rathore O.S, Dhakar S.D, Chauhan. M.S and Ojha.S.N, Hand Book of Extension Education, First edition, Agrotech Publishing Academy, Udaipur.
- Sumita Roy, Tej Verma and Pushpa Gupta 2006 Textbook on Family Approach in Extension Programme Management Directorate of Information and Publications of Agriculture Indian Council of Agricultural Research New Delhi.
- Dahama O.P. and Bhatnagar O.P, Education and Communication Development, Second Edition, Oxford and IBH Publishing Pvt. Ltd, Calcutta.

Part 2

- Santrock, J. W. (2011). Life-span development. New York: McGraw-Hill.
- Singh, A. (Ed.) 2015. Foundations of Human Development. New Delhi: Tata McGraw- Hill.
- Berk, L. (2013). Child development. 9th ed. Boston: Pearson.
- Snow, C. W., &McGaha, C. G. (2003). Infant development (3rd ed.). Upper Saddle River, NJ: Prentice Hall.
- Rice, F.P. (1998). Human Development: A Lifespan Approach. New Jersey: Prentice Hall.
- Rutter, M. and Rutter, M. (1992). Developing Minds: Challenge and continuity across the lifespan.

London: Penguin <ul style="list-style-type: none"> Papalia, D.E. and Martorell, G. (2015). Experience Human Development. McGraw Hill Education. Sharma and Sharma, Baal Vikas
Suggested Continuous Evaluation Methods: <ul style="list-style-type: none"> Seminar/Presentation on any topic of the above syllabus Test with multiple choice questions / short and long answer questions Attendance

B.Sc. First Year Semester I

Fundamentals of Textiles and Family Resource Management

Programme: B.Sc. H. Sc.	Year: First	Semester: I
Course Code: BHSC-113T	Course Title: Fundamentals of Textiles and Family Resource Management	
Course Outcomes: The student at the completion of the course will be able to: <ul style="list-style-type: none"> Understanding of textile and clothing Conceptualization of yarns, fibers and fabrics Basic knowledge of manufacturing processes of some important fibres Comprehend the fundamentals of resource management in changing scenario Familiarize the students with the available resources, their uses and conservation Enable the students to utilize resources in a prudent manner Understand the processes of management in a scientific manner in the use of resources Understating the concepts of income and saving Knowing about work simplification techniques 		
Credits: 4T+2P	Core Compulsory	
Max. Marks: 100	Min. Passing Marks: As per UGC/University CBCS norms	
Total No. of Lectures-90		
Units	Topic	No of Lectures
Part I		
I	Basics of Textiles and Clothing <ul style="list-style-type: none"> Meaning, need, scope and importance Functions of clothes and factors affecting clothing choices Terminologies used in Textile and Clothing Difference between yarn, fibre and fabric Definition and Classification of textile fibres 	03
II	<ul style="list-style-type: none"> Yarn: definition and basic concepts, types and properties Manufacturing process ✓ Mechanical spinning and Chemical Spinning Yarn numbering system-count, denier, Tex Twists in yarns- Z and S twist 	10
III	<ul style="list-style-type: none"> Manufacturing process and properties (physical, chemical and microscopic) of following textile fibres: <ul style="list-style-type: none"> Natural Fibres: <ul style="list-style-type: none"> ✓ Protein: wool and silk 	09

	<ul style="list-style-type: none"> ✓ Cellulose: Cotton 	
IV	<ul style="list-style-type: none"> • Man-made/Synthetic Fibres: manufacturing process and properties (physical, chemical and microscopic)-of following textile fibres: <ul style="list-style-type: none"> ✓ Cellulose: Rayon ✓ Polyamide: Nylon ✓ Polyester ✓ Acrylic and Modacrylic 	08
Part II		
V	<ul style="list-style-type: none"> • Introduction to management: concepts, need, scope, importance, conceptual framework of management • Obstacles to the improvement of management <ul style="list-style-type: none"> ✓ Lack of awareness of management ✓ Lack of awareness of resources ✓ Failure to evaluate result of management ✓ Lack of information ✓ Seeking readymade answer to problems • Qualities of a home maker 	03
VI	<ul style="list-style-type: none"> • Management Process: POSTCoRB <ul style="list-style-type: none"> ✓ Planning ✓ Controlling ✓ Evaluation etc. • Motivating factors of Management-Goals, Values and Standards <ul style="list-style-type: none"> ✓ Goal-definition and types ✓ Values- importance, classifications and characteristic ✓ Standards-definition and classification • Factors affecting values, goals and standards • Interrelatedness of values, goals and standards 	10
VII	<p>Decision Making</p> <ul style="list-style-type: none"> • Meaning • Types of decisions • Steps in decision making • Resources in the family <ul style="list-style-type: none"> ✓ Classification and characteristics ✓ Factors affecting the use of resources • Family life cycle- Stages 	09
VIII	<p>Money Management</p> <ul style="list-style-type: none"> • Family income-meaning and classification <ul style="list-style-type: none"> ✓ Family budget- meaning, need, importance and steps in preparation of budget ✓ Engle's law of consumption ✓ Savings- types of saving; bank and post office schemes etc. <p>Time Management:</p> <ul style="list-style-type: none"> ✓ Importance and Tools in time management- Peak Loads, Work Curves, Rest periods, and Work Simplification 	08

	<ul style="list-style-type: none"> • Techniques of Work simplification • Mundell's Classes of change 	
Practical BHSC-113P Credit: 2	<ul style="list-style-type: none"> • Study of general physical properties of fibers • Fibre identification: Identification of natural and manmade fibers appearance microscopic test, burning test and solubility test. • Study of effect of various acids on fibres • Study of effect of various alkalis on fibres • Study of effect of sunlight on fibres • Study of effect of various laundry substances (soaps and detergents, bleaches) on fibers • Collection and study of various types of Yarns. • Study of S twist and Z twist • Collection and preparation of resource book • Application of management process to organize a different event – planning, organization, evaluation. • Listing out human and non – human resources, listing community resources • Preparing budget 	30
Suggested Readings:		
Part 1 <ul style="list-style-type: none"> • Booth, J.E. (1996). Principles of Textile Testing. New Delhi: CBS Publishers & Distributors Pvt. Ltd. • Corbman, P.B. (1983). Textiles: Fibre to Fabric. McGraw-Hill Publishers. • Collier, B.J., & Epps, H.H. (1998). Textile testing and analysis. Prentice Hall Publishers. • Dantyagi, S. (1996). Fundamentals of Textiles and their Care. India: Orient Black swan Private Limited. • D'Souza, N. (2014). Fabric Care. New Delhi: New Age International Publishers. • Greaves, P.H., Saville, B. P. (1995). Microscopy of textile fibres. Bios Scientific Publishers • Gohl, E., Vile sky, L. (2003), Textile Science: an explanation of fiber properties (2 edition), New Delhi. • Hollen, R. N., Saddler, J., & Langford, A. (1979). Textiles. Macmillan Publishers. • Joseph, M. (1992), Introductory Textile Science. Sixth edition, California: Harcourt College Publishers • Rastogi, D., & Chopra, S. (2017). Textile Science. India: Orient Blackswan Private Limited • Dr. Reena Khanooja, Vastra Vigyan Ewam Paridhan. • Dr. Reena Khanooja. Vastra Vigyan Ke Siddhant. • Dr. Deepa Verma & Dr. Shipra Srivastav. Surface Ornamentation of Fabrics & Community Development Programme. Sahitya prakashan • Dr. Deepa Verma & Monika Tiwari. Clothing Textiles & Family Resource management, sahitya prakashan. • Dr. Pramila Verma. Vastra Vigyan Evam Paridhan. • Dr. Manju Patni. Vastra Vigyan, Paridhan Ewam Pariwarik Sansadhan Vayastha (Clothing, textiles and family resource management), Star Publications. 		
Part 2 <ul style="list-style-type: none"> • Manju Patni, Grih Prabandhan • Dr. Reena Khanuja, Grih Prabandha, Sadhan Vayastha Ewam Aantarik Sajja. • Nickell & Dorsey: Management in Family Living 		

- Gross & Crandle: Management for Modern families
- Vargese: Introduction to Home Management
- Seetharaman P, Batra. S and Mehra. P (2005). An Introduction to Family Resource Management, 1st Edition. New Delhi: CBS Publishers and Distributors. Pp (221 – 241).
- Nickell. P, Rice, A.S. and Tucker, S.P. 1942. Management in family living(5th ed), New York, John Wiley And Sens.
- Paulena Nickell, Ann Smith Rice and Suzanne P. Tucker 1942. Management in family living, John Wiley and Sons, New York. (fifth edition).
- Irma H. Gross , Elizabeth Walbert Crandall and Marjorie M. Knoll, 1973, Management for Modern Families (third edition) Prentice- Hall, Inc., Englewood Cliffs, New Jersey

Suggested Continuous Evaluation Methods:

- Seminar / Presentation on any topic of the above syllabus
- Test with multiple choice questions / short and long answer questions
- Attendance

B.Sc. First Year Semester II

Nutrition Science & Food Preservation

Programme: B.Sc. H. Sc.	Year: First	Semester: II
Course Code: BHSC-121T	Course Title: Nutrition Science & Food Preservation	
<p>Course Outcomes: The student at the completion of the course will be able to:</p> <ul style="list-style-type: none"> • To study the bio-molecules present in biological system of energy metabolism and its nutritional aspects • To study the chemical/biochemical properties of carbohydrates, lipids, and proteins • To study the functional role of proteins. vitamins and minerals • To understand the research techniques used in basic biochemistry and nutritional biochemistry research. • Understand the instruments, techniques and good lab practices for working in food preservation laboratory. • Develop skills for preparation of preserved products • Can start own enterprise on preserved products 		
Credits: 4T+2P	Core Compulsory	
Max. Marks: 100	Min.PassingMarks: As per UGC/University CBCS norms	
Total No. of Lectures-90		
Units	Topic	No of Lectures
Part I		
I	<ul style="list-style-type: none"> • Energy- Units, sources and requirements, BMR, factors affecting BMR. • Carbohydrates- Types, functions, sources, requirement, health conditions affected by carbohydrates, Significance of dietary fiber 	04

	and digestion of carbohydrate	
II	<ul style="list-style-type: none"> Lipids- Types, functions, sources, requirement, health problems associated with lipids and digestion of lipid Proteins- types, functions, sources, requirement, deficiency disorders and protein energy malnutrition and digestion of protein 	08
III	<ul style="list-style-type: none"> Vitamins: Classification, functions, sources, requirement and deficiency of the following- <ul style="list-style-type: none"> (i) Fat soluble vitamins-A, D, E, K; (ii) Water soluble vitamins – C, B complex (thiamine, riboflavin, niacin, folic acid and B₁₂). 	10
IV	<ul style="list-style-type: none"> Minerals- Classification, functions, sources, requirements and deficiency of the following <ul style="list-style-type: none"> (i) Macro Minerals- Calcium, phosphorus. (ii) Micro Minerals- Iron, Iodine, Fluorine and Zinc 	08
Part II		
V	<ul style="list-style-type: none"> Importance and scope of food preservation and storage. 	03
VI	<ul style="list-style-type: none"> Principles and methods of food preservation - drying and dehydration, use of high temperature, use of low temperature, foods as preservatives, use of chemicals, radiation, combination of above methods. 	10
VII	<ul style="list-style-type: none"> Storage of common perishable, semi perishable and non perishable foods. Packaging; functions and packing material 	09
VIII	<ul style="list-style-type: none"> Food laws and standard: Prevention of Food Adulteration Act, Fruit Product Order, AGMARK, Essential Commodity Act, Consumer Protection Act, Bureau of Indian Standards, Codex Standards and FSSAI 	08
Practical BHSC-121P Credit: 2	<ul style="list-style-type: none"> Market survey of raw and preserved foods. Drying of fruits and vegetables (blanched & un-blanched) – Solar drying, Sun drying, oven drying. Domestic preservation of foods by freezing. Preparation of preserved products. Squash, crush, jams, jellies, marmalade, preserves, murabbas, pickles with and without oil, chutneys, ketchup, sauces, candies. Shelf life and sensory evaluation of developed products. Visits to food processing and preservation units, canning and bottling units, grain storage institute dairy plant and FCI godown. Identification of different types of blood cells -slide preparation Monitoring of heart beat, pulse rate and blood pressure Estimation of ascorbic acid content of foods by titrimetric method 	30
Suggested Readings:		
Part 1		

- Guthrie A.H. (1986 : Introductory Nutrition 6th Ed. The C.V. Mosby Company.
- Robinson C.H., Lawin, MR, Chenoweth, W.L and Garwick A.E.(1986) : Normal and therapeutic Nutrition, 17th ED. MacMillan Publishing Company.
- Swaminathan M.-(1985) Essentials of food and nutrition Vol. I & II, Ganesh & Co. Madra.
- Gopalan C. – et. al., (1991) Nutrition Value of Indian Foods, Indian Council of Medical Research, (1989).
- Nutrition Requirements and Recommended Dietary Allowance for Indian, New Delhi.
- FAO/WHO/UNO- Technical Report-Series 724 (1985) Energy and Protein Requirement Geneva.
- WHO – Technical Report Series for Different Nutrition
- Lehninger A L, Nelson D L and Cox M M (2009). Principles of Biochemistry, 6th Ed. CBS Publishers and Distributors.

Part 2

- Potter, N.N. (1996). Food Science. The AVI Publishing Company, Inc., Westport, Connecticut. 568 Report of the ICAR Fifth Deans' Committee
- Sehgal, S., Grewal, R.B., Kawatra, A. and Kaur, Y. (1997). Practical Aspects of Food Preservation. Directorate of Publications. Haryana Agricultural University, Hisar.
- Vijay K., (1999), Text book of Food, Storage and Preservation, Kalyani Publishers, New Dehi.
- Kalia, M. and Sood, S. (2010). Food Preservation and Processing. Revised Edition, Kalyani Publishers, New Delhi.
- Jood, S. and Khetarpaul, N. (2002). Food Preservation. GeetaSomaniAgrotech Publishing Academy, Udaipur.
- Sivasankar, B. (2002). Food Processing and Preservation. PHI Learning Pvt. Ltd. Delhi.
- Deepa Verma. Phal evam sabji parikshan.
- Dr. Sadhna Singh, Dr. Deepa Verma and Dr. Alka Yadav. Fruits and Vegetable Preservation.
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Suggested Continuous Evaluation Methods:

- Seminar/Presentation on any topic of the above syllabus
- Test with multiple choice questions/short and long answer questions
- Attendance

B.Sc. First Year Semester II

Lifespan Development and Extension Programme Planning

Programme: B.Sc. H. Sc.	Year: First	Semester: II
Course Code: BHSC- 122T	Course Title: Lifespan Development and Extension Programme Planning	
Course Outcomes: The student at the completion of the course will be able to: <ul style="list-style-type: none"> • Develop an understanding about the need and importance of studying human growth and development across life span • Learn about the biological and environmental factors that affect development • Learn about the characteristics, needs and developmental tasks of different stages in the human life cycle • Learn about the classic human development theories • Develop professional attitude for working with human beings across life span 		

<ul style="list-style-type: none"> • Understanding concepts on extension programme and programme planning • Knowing various models and steps in programme planning • Understanding monitoring and evaluation of programmes • Understanding people's role in extension programme and programme planning 		
Credits:4T+2P	Core Compulsory	
Max.Marks: 100	Min.PassingMarks: As per UGC/University CBCS norms	
Total No. of Lectures-90		
Units	Topic	No of Lectures
Part I		
I	<ul style="list-style-type: none"> • Stages of Family life Cycle • Infancy- physical, motor, social, emotional, cognitive and language characteristics. 	03
II	<ul style="list-style-type: none"> • Early Childhood- Physical, motor, social, emotional, cognitive and language characteristics. • Late childhood- Physical, motor, social, emotional, cognitive and language characteristics. 	10
III	<ul style="list-style-type: none"> • Adolescence- Physical, motor, social, emotional, cognitive, language characteristics and personality disorder in adolescence and adolescence counseling • Adulthood- Physical, motor, social, emotional, cognitive and language characteristics. 	09
IV	<ul style="list-style-type: none"> • Old age- Physical, motor, social, emotional, cognitive and language characteristics. • Development stages of play: Play as means of development and learning, solitary play, parallel play, associative play and co-operative play. • Marriage: Meaning, definition and types of marriage. Laws related to marriage and family. 	08
Part II		
V	<ul style="list-style-type: none"> • Extension programme- Meaning, need, importance, characteristics • Important terms associated with Extension programme and planning 	03
VI	<ul style="list-style-type: none"> • Extension programme planning- meaning, definition, concept and objectives • Important terms associated with Extension programme planning • Principles, steps and models of programme planning 	10
VII	<ul style="list-style-type: none"> • Monitoring and evaluation of extension programme –concept, definition, purpose • Evaluation- meaning, types and steps 	09
VIII	<ul style="list-style-type: none"> • Abilities of programme planners • Factors affecting programme planning and people's participation • Role of local leaders and agencies in programe planning, implementation and evaluation 	08

Practical BHSC- 122P Credit: 2	<ol style="list-style-type: none"> 1. Observing children indifferent situations, recording the observations, analysing the observations and writing report 2. Assessment of physical development of children 3. Assessment of motor development of children: gross motor skills, fine motor skills 4. Assessment of social behavior 5. Assessment of emotional maturity/ emotional quotient 6. Plan and develop activities to facilitate development in different domains 7. Prepare play materials and teaching aids for children 8. Observational visits to baby clinic to observe full term and preterm babies. 9. Developing extension programmes 10. Assessment of various extension programme 11. Preparation of evaluation criteria for various extension programmes 	30
<p>Suggested Readings:</p> <p>Part 1</p> <ul style="list-style-type: none"> • Rice, F. P. (1998). Human Development: A lifespan approach. New Jersey: Prentice Hall. • Rutter, M. and Rutter, M. (1992) Developing Minds. Challenge and continuity across the life span. London: Penguin. • Santrock, J. W. (2007). A topical approach to life-span development. New Delhi: Tata McGraw-Hill. • Singh, A. (Ed). 2015. Foundations of Human Development: A life span approach. New Delhi: Orient BlackSwan. • Tennant, M. and Pogson, P. (1995) Learning and Change in the Adult Year, San Francisco: Jossey-Bass. <p>Part 2</p> <ul style="list-style-type: none"> • Sandhu, A.S. (1994). Extension Programme Planning. Oxford and IBH Publishing Co., New Delhi. • Savile, A.H. (1986). Extension in Rural Communities: A Manual for Agriculture and Home Extension Workers, London, Oxford University Press, Oxford Tropical Handbook. • Supe, S.V. (1983). An Introduction to Extension Education, Oxford and IBH Co., New Delhi. • Dahama, O.P. and Bhatnagar, O.P. (1987). Education and Communication for Development, Oxford and IBH Publishing Co., New Delhi. • Kelsey, L.D. and Hearne, C.C. (1967). Cooperative Extension Work, Cornell University, Press, Ithaca, New York. • Leagans, J.P. (1961). Programme Planning to Meet People's Needs. In: Extension Education in Community Development, Directorate of Extension, Ministry of Food and Agriculture, Govt. of India. New Delhi. • Ray, G.L. (2001). Extension Communication and Management. Naya Prakash, Calcutta, 4th edition. • Reddy, A.A. (2006). Extension Education, Sree Lakshmi Press, Bapatla, A.P. 8th Edition. • Sandhu, A.S. (1994). Extension Programme Planning. Oxford and IBH Publishing Co., New Delhi. • Swanson, Burton, E. Ed. (1984). Agricultural Extension. A Reference Manual, Rome, Food and Agricultural Organization (FAO), of the United Nations, 2nd Edition. 		
<p>Suggested Continuous Evaluation Methods:</p> <ul style="list-style-type: none"> • Seminar/Presentation on any topic of the above syllabus 		

- Test with multiple choice questions / short and long answer questions
- Attendance

B.Sc. First Year Semester II

Housing and Space Management

Programme: B.Sc. H. Sc.	Year: First	Semester: II
Course Code: BHSC-123T	CourseTitle: Housing and Space Management	
Course Outcomes: The student at the completion of the course will be able to:		
<ol style="list-style-type: none"> 1. Understand the basic concepts of Housing and Space Management 2. Knowing factors affecting housing needs 3. Basic knowledge on principles and concepts on Art and Design 4. Developing understanding on application of elements of design 5. Developing understanding on application of principles of design 		
Credits:4T+2P	CoreCompulsory	
Max.Marks: 100	Min.PassingMarks: As per UGC/University CBCS norms	
TotalNo.ofLectures-90		
Units	Topic	No of Lectures
I	Housing <ul style="list-style-type: none"> • Concept, Importance and Functions of housing • Family housing needs –Protective, economic, affectionate, standard of living, housing goals • Factors influencing selection and purchase of house 	08
II	<ul style="list-style-type: none"> • Principles of house planning – grouping, orientation, circulation, flexibility, privacy, spaciousness, aesthetics, economy, light and ventilation. 	04
III	<ul style="list-style-type: none"> • Introduction to Fundamentals of Art : Design, Definition and types : Structural and Decorative • Elements of Design : Line, Size, Form, Structure, Space, Pattern, Shape 	10
IV	<ul style="list-style-type: none"> • Principles of Design – definition and their characteristics • Types : Balance, Harmony, Proportion, Rhythm, Emphasis 	08
V	<ul style="list-style-type: none"> • Study of colours – classification and dimensions • Color wheel, colour schemes • Prangs Colour system • Principles of color harmony 	10
VI	<ul style="list-style-type: none"> • Kitchen planning – types of kitchen • Planning different work areas in the kitchen. 	03
VII	<ul style="list-style-type: none"> • Furniture's: <ul style="list-style-type: none"> • Types of furniture • Selection of furniture • Furnishing: Selection, care and maintenance, factors affecting 	07

	<p>furnishing choices.</p> <ul style="list-style-type: none"> • Curtains and draperies: type, selection and care, upholstered furniture, cushions • Floor covering, rugs and carpets: Types, care and cleaning. 	
VIII	<ul style="list-style-type: none"> • Flower arrangement: Meaning, need and importance • Types/styles of flower arrangement • Flower collection, storage and arrangement. • Care of flowers and foliage. • Selection and preparation of plant materials. • Drying and preservation of flowers and foliage. • Application of flower arrangements for different areas and occasions. • Preparation of permanent arrangement. • Preparation of bouquets, garlands etc. • Dry Flower arrangement 	10
Practical BHSC-123P Credit: 2	<ul style="list-style-type: none"> • Preparation of colour wheel and colour schemes. • Application of elements and principles of design • Use of colour for wall/floor decorations and making accessories. • Application of design principles in flower arrangement • Flower making from different materials. • Development of designs and construction of any five items- Cushions, Curtains, Carpets, Door mats, Rugs, Table mats. • Preparation of Wall paintings, Picture frame designs and Crafts out of fibre, fabric coir, bamboo, clay metal etc. • Preparation of resource book. 	30
<p>Suggested Readings:</p> <ol style="list-style-type: none"> 1. Arora. S. P., and Bindra S.P. (2005). Building Construction. Delhi: Dhanpat Rai Publications 2. Bhavikatti, S.S., and Chitawadagi, M.V. (2019). (1st Ed.). Building Planning and Drawing. Hubli: Dreamtech Press 3. Faulkner, R. and Faulkner, S. (1987). Inside Today's Home. New York: Rinehart Winston, India. 4. Gandotra V., Shukul M., and Jaiswal N. (2011). Introduction to Interior Design and Decoration, New Delhi: Dominant publishers, India. 5. Jankowsky, W.(2001). Modern Kitchen Work Book. New Delhi: Rockport Publishers, India. 6. Dr. Reena Khanuja, Grih Prabandha, Sadhan Vayastha Ewam Aantarik sajja. 7. Management in family living Nickle and Dorsey 8. Home - furnishing A. H. Rutt. 9. Home with characters Craig and Rush. 10. Home Management Gross and Crandell. 11. Manju Patni Grih Prabandhan, 12. Bela Bhargav Grih Prabandhan, Sadhan Vyavastha Ttha Aantarik sajja, <ul style="list-style-type: none"> • Dr. Deepa Verma & Monika Tiwari. Clothing Textiles & Family Resource management, sahitya prakashan. 		
<p>Suggested Continuous Evaluation Methods:</p> <ul style="list-style-type: none"> • Seminar/Presentation on any topic of the above syllabus • Test with multiple choice questions / short and long answer questions • Attendance 		

B. Sc. Second Year Semester III**Nutrition during Life Cycle**

Programme: B.Sc. H. Sc.	Year: Second	Semester: III
CourseCode: BHSC- 211T	CourseTitle: Nutrition during Life Cycle	
Course Outcomes: The student at the completion of the course will be able to: <ol style="list-style-type: none">1. Understanding the basic concept of balance diet, principles of meal planning, food pyramid.2. Acquire knowledge about the nutritional needs of an individual through the life cycle.3. Gain knowledge of nutrition consideration, guidelines, food selection for different age groups, activity levels and income groups.4. Competent in calculating nutritive value of food product.5. Able to provide balanced meal to different age groups and physiological conditions.		
Credits: 4T+2P	CoreCompulsory	
Max. Marks: 100	Min.PassingMarks: As per UGC/University CBCS norms	
Total No. of Lectures-90		
Units	Topic	No. of Lectures
I	<ul style="list-style-type: none">• Basic concepts and importance meal planning: Factors affecting meal planning. Dietary guidelines for Indians. BMI-definition	07
II	<ul style="list-style-type: none">• Hormonal and Physiological changes, RDA and selection of food during pregnancy and lactation	08
III	<ul style="list-style-type: none">• Complications of pregnancy and their nutritional management, impact of nutrition on the outcome of pregnancy	06
IV	<ul style="list-style-type: none">• Psycho-physiology of lactation; milk synthesis and secretion, maternal needs during lactation, composition of colostrums and mature human milk.	08
V	<ul style="list-style-type: none">• Nutrition during Infancy- Weaning and supplementary foods. Dietary guidelines & nutritional concerns, RDA, Nutritional disorders and common ailments in infancy	06
VI	<ul style="list-style-type: none">• Nutrition during childhood: Dietary guidelines & nutritional concerns, RDA and selection of food for Preschool children, Nutritional Problems of preschoolers	08
VII	<ul style="list-style-type: none">• Dietary guidelines, RDA and selection of food for School children & Adolescents	09
VIII	<ul style="list-style-type: none">• Nutrition during the adult years and old age.: RDA, sex and different activities, food selection	08

Practical BHSC- 211P Credit: 2	<ul style="list-style-type: none"> • -Use of Food Composition Table and food exchange list for meal planning • Planning and preparation of diets for <ol style="list-style-type: none"> a. Pregnant and Lactating woman b. Weaning food c. Preschool child d. School age child and adolescents e. packed lunches for preschoolers and school children, adolescent boys and girls, f. Young adult g. Elderly • Sensory evaluation of all the developed products 	30
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Suggested Readings:

1. Seth V and Singh K (2006). Diet Planning through the Life Cycle: Part 1 Normal Nutrition. A Practical Manual. Elite Publishing House Pvt. Ltd. New Delhi.
2. Gopalan C, Rama Sastri BV, Balasubramanian SC (1989) Nutritive Value of Indian Foods. National Institute of Nutrition, ICMR, Hyderabad.
3. National Institute of Nutrition, ICMR, Hyderabad.
4. Khanna K, Gupta S, Seth R, Passi SJ, Mahna R, Puri S (2013). Textbook of Nutrition and Dietetics. Phoenix Publishing House Pvt. Ltd.
5. Wardlaw GM, Hampi JS, DiSilvestro RA (2004). Perspectives in Nutrition, 6th edition. McGraw Hill.
6. ICMR (2011) Dietary Guidelines for Indians. Published by National Institute of Nutrition, Hyderabad.
7. ICMR (2010) Recommended Dietary Allowances for Indians .Published by National Institute of Nutrition, Hyderabad.
8. Chadha R and Mathur P eds. Nutrition : A Lifecycle Approach. Orient Blackswan, New Delhi. 2015.
9. Dr. Anita Singh, Advance Poshan ewam manav Vikas.
10. Srivastava/ Agnihotri, Unnat Poshan ewam manav vikas
11. Dr. Lalita Sharma, Matra evam Shishu poshan

Suggested Continuous Evaluation Methods:

- Seminar/Presentation on any topic of the above syllabus
- Test with multiple choice questions/short and long answer questions
- Attendance

B.Sc. Second Year Semester III

Extension Communication

Programme: B.Sc. H. Sc.	Year: Second	Semester: III
Course Code: BHSC- 212T	Course Title: Extension Communication	
<p>Course Outcomes: The student at the completion of the course will be able to</p> <ul style="list-style-type: none"> • Develop understanding of communication. • Comprehend the elements and process of effective communication • Understanding about various communication methods and their use in community setting • Understanding role of traditional media in communication • Understanding concept of print and electronic communication in development 		

Credits:4T+2P	CoreCompulsory	
Max. Marks: 100	Min.PassingMarks: As per UGC/University CBCS norms	
Total No. of Lectures-90		
Units	Topic	No of Lectures
I	<ul style="list-style-type: none"> • Concept ,meaning, scope, importance, nature, level and purpose of communication of communication • Functions of communication 	03
II	Communication process- <ul style="list-style-type: none"> • concept and elements • Some concepts related to communication- entropy, redundancy, frame of reference, channel capacity, noise., message, communicator etc. 	10
III	<ul style="list-style-type: none"> • Communication gap • Feedback in communication- meaning and importance, type and problems in feedback 	09
IV	<ul style="list-style-type: none"> • Channels of communication-dimension, classification, selection and use • Communication barriers and ways to overcome them. • Distortions in transmission of message and their causes 	08
V	<ul style="list-style-type: none"> • Models of communication – Aristotle, Berlo, Leagans, Rogers and shoemaker, Laswell, Schramm, Westley and Maclean etc. 	03
VI	Methods of communication to reach individuals <ul style="list-style-type: none"> • Individual, Group and Mass methods : types and characteristics, 	10
VII	Media for communication: <ul style="list-style-type: none"> • Traditional media –meaning and characteristics, role in communication • Print and electronic media- meaning and importance, difference between print and electronic media 	09
VIII	Audios visuals Aids: <ul style="list-style-type: none"> • Classification and characteristics • Selection, preparation and effective use in Communication 	08
Practical BHSC- 212P Credit: 2	<ul style="list-style-type: none"> • Preparation of various communication tools - charts, posters, flash cards, scripts, reading materials, Leaflet, Handouts, Booklet, flipbook, Slides, magazines, flash cards, flannel cars and other teaching aids • Practice in use of extension methods and techniques in the community. • Identification of local few folk forms of the region. • Dramatization of any issue through suitable communication method • Understanding communication process • Knowing about message distortion 	30
Suggested Readings: <ol style="list-style-type: none"> 1. Reddy A : Extension Education, Bapatia, India, Sri Laxmi Press 2. WHO- Education for Health 		

3. Gorges, Alan Teaching Adults in Extension Education
4. Dhama OP & Bhatnagar OP: Education and Communication for Development
5. Ray, G.L. (2004), Extension Communication and Management. New Delhi :Kalyani Publishers.
6. Uma, J. (2005). *Text book of mass communication and media* (pp-27- 50). New Delhi: Anmol Publications pvt . Ltd.
7. Keval, J, K. (1999). *Mass Communication in India* (pp-26-64). Mumbai: Jaico publishing house.
8. Yadava, J, S. and Pradeep, M. (1998). *Issues in mass communication* (pp-97-116). New Delhi: Kanishka Publications, Distributors.

Suggested Continuous Evaluation Methods:

- Seminar/Presentation on any topic of the above syllabus
- Test with multiple choice questions/short and long answer questions
- Attendance

B.Sc. Second Year Semester III

Basics of Clothing Construction

Programme: B.Sc. H. Sc.	Year: Second	Semester: III
Course Code: BHSC- 213T	Course Title: Basics of Clothing Construction	
Course Outcomes:		
The student at the completion of the course will be able to:		
<ul style="list-style-type: none"> • Understand fundamentals of Clothing Construction • Know terminologies used in clothing construction • Learning skills for selection of fabrics • Know about some basic preparation of garments • Acquire practical knowledge about construction of some basic garments 		
Credits: 4T+2P	Core Compulsory	
Max. Marks: 100	Min. Passing Marks: As per UGC/University CBCS norms	
Total No. of Lectures-60		
Units	Topic	No of Lectures
I	<ul style="list-style-type: none"> • Basic terminologies used in clothing construction • Equipments and supplies used in clothing construction, their maintenance • Problems faced and remedies with specific reference to sewing machine. 	06
II	<ul style="list-style-type: none"> • Drafting and general principles of clothing construction, 	08
III	<ul style="list-style-type: none"> • Arranging Stitching area, Layout of paper pattern, marking, cutting and stitching 	05
IV	<ul style="list-style-type: none"> • Body measurement for different types of garments 	08
V	<ul style="list-style-type: none"> • Preparation of fabrics for garment making, laying out of pattern, marking and cutting of different types of fabrics (like checks, floral prints, pile etc.) • Interfacing, lining and interlining 	09

VI	<ul style="list-style-type: none"> • Different types of stitches, necklines, fasteners etc. used in clothing construction 	08
VII	<ul style="list-style-type: none"> • Fullness, gathers, pleats, tucks etc. • Finishing of raw edges and disposal of fullness in clothing construction 	08
VII	<ul style="list-style-type: none"> • Special considerations for sewing for babies and children • Mending and renovation 	08
Practical BHSC- 213P Credit: 2	<ul style="list-style-type: none"> • Knowing about Sewing machine and its parts • Learning some common defects in sewing and remedies for them • Understanding equipment used for clothing construction. • Knowing some sewing techniques: basic stitches, seams, fullness, gathers, pockets, tucks etc • Learning fasteners in common use, their application to the garments • Practice on pattern making • Drafting, cutting and stitching of some common garments such as: Bib, apron, frock, blouse, petticoat, suits etc. 	30

Suggested Readings:

- Armstrong, Pearson. (1995), Pattern making for Fashion Design, Fairchild Publication, New York 1995 (Indian Ed.)
- Cream, Penelope.,(1996), The Complete Book of Sewing - A Practical Step by Step Guide to Sewing Techniques, DK Publishing Book, New York
- Dorothy wood, the practical encyclopedia of sewing, Anness publishing Ltd, London.
- Holman, Gillian. (1997), Pattern Cutting Made Easy, BSP.
- Janace E. Bubonia. (2012), Apparel production terms and processes, Fairchild Books, New York.
- Anna Jacob: Art of Sewing UBSPD, New Delhi
- Bane A –Tailoring, Mc Graw Hill Publication
- Reader’s Digest: Complete Guide to Sewing, Association inc New York
- Doongaji & Deshpandey : Basic Process and Clothing Construction, New Delhi, NewRaj Book Depot

Suggested Continuous Evaluation Methods:

- Seminar/Presentation on any topic of the above syllabus
- Test with multiple choice questions/short and long answer questions
- Attendance

B.Sc. Second Year Semester IV

Food Microbiology

Programme: B.Sc. H. Sc.	Year: Second	Semester: IV
Course Code: BHSC-221T	Course Title: Food Microbiology	

Course Outcomes:

The student at the completion of the course will be able to:

- To provide knowledge of microorganisms associated with foods and their origin and role;
- Knowledge of the factors that determine the presence, growth and survival of microorganisms in

food <ul style="list-style-type: none"> • Knowledge of the main microbial groups involved in different food types and their prevention. 		
Credits: 4T+2P	Core Compulsory	
Max. Marks: 100	Min. Passing Marks: As per UGC/University CBCS norms	
Total No. of Lectures- 90		
Units	Topic	No of Lectures
I	<ul style="list-style-type: none"> • Introduction to microbiology and its relevance to everyday life. • Microscope: different parts of the microscope, their use and care of the microscope 	08
II	<ul style="list-style-type: none"> • General morphology of micro-organisms- general characteristics of bacteria, fungi, virus, protozoa and algae 	10
III	<ul style="list-style-type: none"> • Growth of micro-organism- growth curve. Thermal Death Time • Effect of environmental factors on growth of microorganism, pH, water activities, oxygen availability, temperature 	12
IV	<ul style="list-style-type: none"> • Growth media, types and uses. • Control of micro-organisms- Physical and chemical methods 	10
V	<ul style="list-style-type: none"> • Microbial contamination and spoilage of different kinds of foods and their prevention: Cereal and cereal products, vegetables and fruits, Meat and fish, eggs and poultry, milk and milk products, canned foods 	10
VI	<ul style="list-style-type: none"> • Food fermentation: definition and types (batch, fed batch and continuous). • Staining: Gram staining: Gram negative and gram positive bacteria 	10
Practical BHSC- 221P Credit: 2	<ul style="list-style-type: none"> • Demonstration of the different parts of the microscope, their use and care • List the name of different equipments and their uses in Food Microbiology laboratory • Preparation of Bacterial Smear • Simple Staining • Preparation of common laboratory media for cultivation of bacteria, yeast and molds. 	30
Suggested Readings: <ul style="list-style-type: none"> • Food Microbiology by Stanier • Textbook of microbiology by Pclezar • Martin R. Adams and Maurice O. Moss. 2008. Food Microbiology, 3rd Ed., The Royal Society of Chemistry, Cambridge, UK. • James M. Jay. 2000. Modern Food Microbiology, 6th Ed. Aspen Publishers, Inc., Gaithersburg, Maryland, USA. • George J. Banwart. 1989. Basic Food Microbiology, 2nd Ed. Chapman & Hall, New York, USA. 		

- William C. Frazier and Dennis C. Westhoff. 1987. Food Microbiology, 4th Ed. Tata Mc Graw Hill Education, New Delhi.

Suggested Continuous Evaluation Methods:

- Seminar/Presentation on any topic of the above syllabus
- Test with multiple choice questions/short and long answer questions
- Attendance

B.Sc. Second Year Semester IV

Entrepreneurship Development

Programme: B.Sc. H. Sc.	Year: Second	Semester: IV
Course Code: BHSC-222T	Course Title: Entrepreneurship Development	
Course Outcomes:		
The student at the completion of the course will be able to		
<ol style="list-style-type: none"> 1. Development of concept of Enterprise and Entrepreneurship 2. Development of Understanding of scope of Entrepreneurship 3. Development of Understanding of process of Entrepreneurship 4. Development of Understanding of support institutions to promote Entrepreneurship 		
Credits: 4T+2P	Core Compulsory	
Max. Marks: 100	Min. Passing Marks: As per UGC/University CBCS norms	
Total No. of Lectures- 90		
Units	Topic	No of Lectures
I	<ul style="list-style-type: none"> • Definition and concept of Entrepreneurship, enterprise and entrepreneur, • Difference between Wage Employment, self-employment and Entrepreneurship 	08
II	<ul style="list-style-type: none"> • Role of entrepreneurs in economic development of India. • Role of women entrepreneurs: opportunities and problems 	08
III	<ul style="list-style-type: none"> • Qualities of personality of an entrepreneur • Entrepreneurial motivation • Process of Enterprise development and management 	08
IV	<ul style="list-style-type: none"> • Types of enterprises 	08
V	<ul style="list-style-type: none"> • Process of initiating enterprise. • Identification of opportunity • Preplanning of formalities • Preparation of preliminary project report 	10
VI	<ul style="list-style-type: none"> • Govt. schemes and programmes for entrepreneurship development 	05
VII	<ul style="list-style-type: none"> • Legal requirements for enterprise 	05
VIII	<ul style="list-style-type: none"> • Entrepreneurial motivation and competencies – meaning, introduction and classification 	08
Practical BHSC- 222P Credit: 2	<ul style="list-style-type: none"> • Project Planning, formulation and report preparation (individual/group exercise) 	30

	<ul style="list-style-type: none"> • Interaction with entrepreneurs (industry visits) • Visit to small scale industries. • Interaction with successful entrepreneurs. • Visit to financial institutions and support agencies. • Preparation of project proposal for funding by different agencies 	
<p>Suggested Readings:</p> <ul style="list-style-type: none"> • Kaulgud A Entrepreneurship management • Ormerod A Textile Project Management, the Textile Institute, 1992. • Sangram Keshari Mohanti Fundamentals & Entrepreneurship: 2009: PHI learning. • Vasanth Desai the dynamics of entrepreneurial development & Management: 6th edition Himalaya publish house. 2009. • Franklin, T. Principles of Management, AITBS, 2002 • S.S.Khanka, 'Entrepreneurial Development', S.Chand and Company Limited, New Delhi, 2001. • Vasant Desai "Dynamics of Entrepreneurial Development and Management", Himalaya • Prabha Singh (2009) "Rural Women and Development of Entrepreneurship with special reference to Punjab" in Empowerment of Rural Women in India Kanishka Publishers, New Delhi. • Sangram keshari Mohanty (2005) "Fundamentals of entrepreneurship", Prentice-Hall of India Privated Limited, New Delhi. • C.P.Yadav (2000) "Encyclopedia of Entrepreneurship Development, Anmol Publications PVT. LTD., 		
<p>Suggested Continuous Evaluation Methods:</p> <ul style="list-style-type: none"> • Seminar/Presentation on any topic of the above syllabus • Test with multiple choice questions/short and long answer questions • Attendance 		

B.Sc. Second Year Semester IV

Fabric Construction and Finishing

Programme: B.Sc. H. Sc.	Year: Second	Semester: IV
Course Code: BHSC-223T	CourseTitle: Fabric Construction and Finishing	
<p>Course Outcomes:</p> <p>The student at the completion of the course will be able to</p> <ol style="list-style-type: none"> 1. Understanding techniques and processes involved in fabric construction 2. Understanding the principles and processes of finishing fabrics 3. Developing knowledge on weaves and weaving process 4. Understanding applications and use of various types of fabric finishes for specific purposes 		
Credits:4T+2P	Core Compulsory	
Max. Marks: 100	Min.PassingMarks: As per UGC/University CBCS norms	
Total No. of Lectures- 90		
Units	Topic	No of Lectures
I	Fabric construction- concept and terminologies	03

II	Structure and working of handloom	08
III	Types of weaves and Weaving process	06
IV	Other processes of fabric preparation- Felting, Braiding, Netting, Knitting, Bonding, Lace etc.	08
V	Different types of printing- <ul style="list-style-type: none"> ✓ block printing, stencil printing, tie and dye, ✓ batik with different dyes ✓ screen printing etc. 	08
VI	Definition Classification and purpose of finishes	10
VII	Finishing of Textiles <ul style="list-style-type: none"> • Bleaching • Mercerization • Weighing and sizing • Singeing • Beetling • Calendaring • Tentering 	09
VIII	Finishing of Textiles <ul style="list-style-type: none"> • Embossing • Napping • Water resistant and water proof • Crease resistant • Sanforization • Moth resistant and bacteriostate • Antistatic • Stain and soil resistant 	08
Practical BHSC-223P Credit: 2	<ul style="list-style-type: none"> • Identification of weaves • Design development: All over design, border design, spot design and pallav design. • Printing: Block printing, stencil printing, tie and dye and batik with different dyes. • Screen printing and Stain removal • Bleaching, whitening, Mercerization and Starching 	30

Suggested Readings:

- Corbman, P.B. (1983). Textiles: Fibre to Fabric. McGraw-Hill Publishers.
- Dantyagi, S. (1996). Fundamentals of Textiles and their Care. India: Orient Black swan Private Limited.
- D'Souza, N. (2014). Fabric Care. New Delhi: New Age International Publishers.
- Dr. Deepa Verma & Monika Tiwari. Clothing Textiles & Family Resource management, sahitya prakashan.
- Gohl, E., Vile sky, L. (2003), Textile Science: an explanation of fiber properties (2 edition), New Delhi.

- Hollen, R. N., Saddler, J., & Langford, A. (1979). Textiles. Macmillan Publishers.
- Joseph, M. (1992), Introductory Textile Science. Sixth edition, California: Harcourt College Publishers
- Rastogi, D., & Chopra, S. (2017). Textile Science. India: Orient Blackswan Private Limited.

Suggested Continuous Evaluation Methods:

- Seminar/Presentation on any topic of the above syllabus
- Test with multiple choice questions / short and long answer questions
- Attendance

Group 1

B.Sc. Third Year Semester V

Food Science

Programme: B.Sc. H. Sc.	Year: Third	Semester: V
Course Code: BHSC-311T	Course Title: Food Science	
Course Outcomes: The student at the completion of the course will be able to:		
<ol style="list-style-type: none"> 1. Understand the basic concept of food science and its multidisciplinary nature. 2. Acquire brief and coherent knowledge of food chemistry and its application in cookery. 3. Gain knowledge of nutritional composition of various food commodities, its wise selection and storage guidelines. 4. To know the chief nutrition provided by different food groups. 		
Credits: 6T	Core Compulsory/Elective	
Max. Marks: 100	Min. Passing Marks: As per UGC/University CBCS norms	
Total No. of Lectures-90		
Units	Topic	No of Lectures
I	<ul style="list-style-type: none"> • Introduction to food science and its multidisciplinary approach • Cereals; Functional properties: gelatinization, dextrinization. Effect of processing on nutritive value of cereals 	10
II	<ul style="list-style-type: none"> • Fats and oils- Shortenings, Emulsifying agents, Fat substitutes, Role in cookery, Deterioration of fats/oils 	10
III	<ul style="list-style-type: none"> • Pulses: Effect of processing on nutritive value, Anti nutritional factors of pulses. 	12
IV	<ul style="list-style-type: none"> • Milk: Composition of milk, Effect of heat, acid etc on milk 	12
V	<ul style="list-style-type: none"> • Meat, Fish and poultry: Nutritional contribution in diet, brief description of ageing, tenderization and curing 	12
VI	<ul style="list-style-type: none"> • Egg: Structure, composition and nutritive value, storage, evaluation of quality of egg, role of egg in cookery. 	12
VII	<ul style="list-style-type: none"> • Fruits and vegetables: Nutritional contribution, effect of processing on nutritive value and different pigments of Fruits 	

	and vegetables.	10
VIII	<ul style="list-style-type: none"> Food additives: Definition, types; Preservatives, coloring agents, antioxidants, emulsifying agents, leavening agents and stabilizing agents 	12
Suggested Readings: <ul style="list-style-type: none"> Khanna K, Gupta S, Seth R, Mahna R, Rekhi T (2004). The Art and Science of Cooking: A Practical Manual, Revised Edition. Elite Publishing House Pvt Ltd. Raina U, Kashyap S, Narula V, Thomas S, Suvira, Vir S, Chopra S (2010). Basic Food Preparation: A Complete Manual, Fourth Edition. Orient Black Swan Ltd. Bamji MS, Krishnaswamy K, Brahmam GNV (2009). Textbook of Human Nutrition, 3rd edition. Oxford and IBH Publishing Co. Pvt. Ltd. Srilakshmi (2007). Food Science, 4th Edition. New Age International Ltd. Wardlaw and Insel MG, Insel PM (2004). Perspectives in Nutrition, Sixth Edition. Mosby. Chadha R and Mathur P (eds). Nutrition: A Lifecycle Approach. Orient Blackswan, Delhi. 2015 P13 		
Suggested Continuous Evaluation Methods: <ul style="list-style-type: none"> Seminar/Presentation on any topic of the above syllabus Test with multiple choice questions/short and long answer questions Attendance 		

B.Sc. Third Year Semester V

Therapeutic Nutrition

Programme: B.Sc. H. Sc.	Year: Third	Semester: V
Course Code: BHSC-312T	Course Title: Therapeutic Nutrition	
Course Outcomes: The student at the completion of the course will be able to: <ul style="list-style-type: none"> Knowledge of principles of diet therapy Understanding the various therapeutic modification of normal diet Ability to counsel the persons and individuals about dietary intakes and modifications 		
Credits: 4T+2P	Core Compulsory/Elective	
Max. Marks: 100	Min. Passing Marks: As per UGC/University CBCS norms	
Total No. of Lectures- 90		
Units	Topic	No of Lectures
I	<ul style="list-style-type: none"> Basic concepts of diet therapy, role of dietitian Determination of nutritional requirements: recommended dietary allowance, calorie consumption unit, 	05
II	<ul style="list-style-type: none"> Therapeutic modifications of the normal diet, types of diets Methods of feeding (Normal and artificial) 	07
III	<ul style="list-style-type: none"> Fever: Etiology, symptoms and dietary management in acute and chronic fevers. Typhoid, influenza, tuberculosis 	09
IV	<ul style="list-style-type: none"> GIT: Etiology, clinical features and dietary management of: Peptic ulcers, Diarrhoea, Underweight, overweight and obesity 	08

V	<ul style="list-style-type: none"> • Diabetes: Etiology, clinical features and dietary management • Cardiovascular disease Etiology, clinical features and dietary management of Hypertension and atherosclerosis 	06
VI	<ul style="list-style-type: none"> • Etiology, symptoms and dietary management in liver diseases. Hepatitis and jaundice 	08
VII	<ul style="list-style-type: none"> • Renal Disorder: nephritis, types of renal failure, dialysis. • PCOD and post menopausal nutrition- life style modification and their nutritional management 	09
VIII	<ul style="list-style-type: none"> • Etiology, symptoms and dietary management in Arthritis and Gout. 	08
Practical BHSC-312P Credit: 2	<ul style="list-style-type: none"> • Planning of different types of diets: Bland, liquid, semi-liquid. Soft and normal • Planning and preparation of diets in- <ul style="list-style-type: none"> a. Overweight and underweight b. Fevers c. Constipation and Diarrhoea, ulcers d. Jaundice and other liver diseases e. Diabetes mellitus, Hypertension and coronary heart diseases, f. Renal diseases g. Gout h. Arthritis i. Planning and preparation of diets for pregnant and lactating women. • Planning and preparation of diets for special occasion. Birthdays, festivals, packed lunches. 	30
<p>Suggested Readings:</p> <ul style="list-style-type: none"> • Khanna K, Gupta S, Seth R, Mahna R, Rekhi T (2004). The Art and Science of Cooking: A Practical Manual, Revised Edition. Elite Publishing House Pvt Ltd. • Raina U, Kashyap S, Narula V, Thomas S, Suvira, Vir S, Chopra S (2010). Basic Food Preparation: A Complete Manual, Fourth Edition. Orient Black Swan Ltd. • Bamji MS, Krishnaswamy K, Brahmam GNV (2009). Textbook of Human Nutrition, 3rd edition. Oxford and IBH Publishing Co. Pvt. Ltd. • Srilakshmi (2007). Food Science, 4th Edition. New Age International Ltd. • Wardlaw and Insel MG, Insel PM (2004). Perspectives in Nutrition, Sixth Edition. Mosby. • Chadha R and Mathur P (eds). Nutrition: A Lifecycle Approach. Orient Blackswan, Delhi. 2015 P13- 		
<p>Suggested Continuous Evaluation Methods:</p> <ul style="list-style-type: none"> • Seminar/Presentation on any topic of the above syllabus • Test with multiple choice questions/short and long answer questions • Attendance 		

Group 2

B.Sc. Third Year Semester V

Early Childhood Care and Education

Programme: B.Sc. H. Sc.	Year: Third	Semester: V
CourseCode: BHSC-313T	CourseTitle: Early Childhood Care and Education	
Course Outcomes: The student at the completion of the course will be able to: <ul style="list-style-type: none"> • Explain the need and importance of studying childhood as a distinctive stage of the life-span. • Describe the historical views and theories on childhood • Describe the characteristics, needs and developmental tasks of infancy, early childhood • Explain the importance of early childhood years and significance of intervention programs for early childhood development. 		
Credits: 4T+2P	Core Compulsory/Elective	
Max. Marks: 100	Min. Passing Marks: As per UGC/University CBCS norms	
Total No. of Lectures-90		
Units	Topic	No of Lectures
I	<ul style="list-style-type: none"> • Significance and objectives of Early Childhood Care and Education. • Objectives of ECCE: ECE Programme- Balwadi, Anganwadi, Nursery Schools, Kindergarten, Montessori, Laboratory Nursery School. ECCE Programme- I.C.D.S. and Mobile Creche, Play Group, Crèche and Day Care 	03
II	<ul style="list-style-type: none"> • View of Educationist and Philosophers - Comenius, Rousseau, Pestalozzi, Frobel, McMillan Sisters, Dewey and Montessori. 	10
III	<ul style="list-style-type: none"> • Psychological- Recognition of Effect of experiences in early childhood years, opportunities for expression of anger, tension through creative activities and dramatic play for proper mental hygiene. 	09
IV	<ul style="list-style-type: none"> • Cognitive approach – Piaget’s contribution to curriculum for cognitive development. 	08
V	<ul style="list-style-type: none"> • ECCE in India – Contribution of Rabindra Nath Tagore, Gandhiji, Tarabai Modak 	03
VI	<ul style="list-style-type: none"> • Recent Development: Institutions and contributions of NGOs 	10
VII	<ul style="list-style-type: none"> • Programme planning in ECE- Steps and types of programme planning, activities to promote all round development of preschool children- cognitive, language, socio-emotional and motor development 	09
VIII	<ul style="list-style-type: none"> • Parental involvement in early childhood education and care programmes 	08
Practical BHSC-313P Credit: 2	<ul style="list-style-type: none"> • Developing and conducting activities to promote all the developments i.e. physical, motor, cognitive, language, socio-emotional and personality. • Prepare picture book/story/Resource book for infants and toddlers. • Planning pre-reading and writing skills. Collection of 	30

	<p>traditional stories and songs.</p> <ul style="list-style-type: none"> Plan activities/materials to promote mathematical concepts and science experience. Visit, observe and submit report to early childhood education center and recording observation. crèches, balwadis/aganwadi and preparatory schools. 	
<p>Suggested Readings:</p> <ul style="list-style-type: none"> Agarwal, J. C. (2007). Early childhood care and education: principles and practices. New Delhi: Shipra Agarwal, S.P. and Usmani, M. (2000). Children's education in India: from vedic a. times to twenty first century New Delhi: Shipra. Canning, N. (2010) Play and practice in the early years: Foundation stage. New Delhi: Sage. Fleer, M. (2010). Early learning and development: Cultural–historical concepts in play. Cambridge: Cambridge University Press. Bamji MS, Krishnaswamy K, Brahmam GNV (2009). Textbook of Human Nutrition, 3rd edition. Oxford and IBH Publishing Co. Pvt. Ltd. Srilakshmi (2007). Food Science, 4th Edition. New Age International Ltd. Wardlaw and Insel MG, Insel PM (2004). Perspectives in Nutrition, Sixth Edition. Mosby. Chadha R and Mathur P (eds). Nutrition: A Lifecycle Approach. Orient Blackswan, Delhi. 2015 P-13 		
<p>Suggested Continuous Evaluation Methods:</p> <ul style="list-style-type: none"> Seminar/Presentation on any topic of the above syllabus Test with multiple choice questions/short and long answer questions Attendance 		

B.Sc. Third Year Semester V

Extension Training Management

Programme: B.Sc. H. Sc.	Year: Third	Semester: V
Course Code: BHSC-314T	Course Title: Extension Training Management	
<p>Course Outcomes: The student at the completion of the course will be able to:</p> <ul style="list-style-type: none"> Understanding the basic concept of training and its importance Knowledge on various training methods Understanding concept of adult learning Understanding concept of training evaluation Conceptualization of developing training objectives 		
Credits: 6T	Core Compulsory/Elective	
Max. Marks: 100	Min. Passing Marks: As per UGC/University CBCS norms	
Total No. of Lectures- 90		
Units	Topic	No. of Lectures
I	<ul style="list-style-type: none"> Training: Concept, need, definition, importance. Identification of training need. Types of Training 	07

II	<ul style="list-style-type: none"> • Training process • Different phases of training and its management.. 	10
III	<ul style="list-style-type: none"> • Qualities of good trainer- communications skills, training skills, motivational skills and handling difficult situations. 	12
IV	<ul style="list-style-type: none"> • Adult learning- meaning and importance • Characteristics of adult learner. • Principles of adult learning • Differences between adult and child learning 	10 10
V	<ul style="list-style-type: none"> • Facilitation skills in training • Problems and prospects of training. 	07
VI	<ul style="list-style-type: none"> • Designing training module: Basic guidelines • Steps in module designing. 	10
VII	<ul style="list-style-type: none"> • Training methods- seminar, conference, symposium, workshop, lecture, panel discussion etc. 	14
VIII	<ul style="list-style-type: none"> • Training evaluation: Objectives, principle, steps • Indicators of training evaluation. • Important training institutions in India 	10
<p>Suggested Readings:</p> <ul style="list-style-type: none"> • Gupta, C.B. (2001). Human Resource Management. Sultan Chand and Sons. • Dahama, O.P. and Bhatnagar, O.P. (2003). Education and Communication for Development. Oxford and IBH Publishing Co. Pvt. Ltd. • Lynton, R.P. and Pareek, V. (2008). Training for Development. Vistaar Publications. • Narwani, G.S. (2002). Training for Rural Development. Rawat Publication. • Saxena, J.P. and Kakkar, A.T. (2000). Training and Development 		
<p>Suggested Continuous Evaluation Methods:</p> <ul style="list-style-type: none"> • Seminar/Presentation on any topic of the above syllabus • Test with multiple choice questions/short and long answer questions • Attendance 		

Group 3

B.Sc. Third Year Semester V

Family Economics and Consumer Education

Programme: B.Sc. H. Sc.	Year: Third	Semester: V
Course Code: BHSC-315T	Course Title: Family Economics and Consumer Education	
<p>Course Outcomes: The student at the completion of the course will be able to:</p> <ol style="list-style-type: none"> 1. To learn about the family income. 2. To have a fair knowledge about the saving methods 3. To know about the consumer rights and laws 		
Credits: 6 T	Core Compulsory/Elective	
Max. Marks: 100	Min. Passing Marks: As per UGC/University CBCS norms	
Total No. of Lectures-90		

Units	Topic	No of Lectures
I	<ul style="list-style-type: none"> • Meaning and scope of family finance management. • Family - definitions, functions and types. • Factors affecting family income and expenditure 	03
II	<ul style="list-style-type: none"> • Income : concepts and types -productive income, hidden income, money income, real income, psychic income 	10
III	<ul style="list-style-type: none"> • Budgeting - steps and types of family budget, • Engel's law of consumption. • Account keeping and record keeping. 	09
IV	<ul style="list-style-type: none"> • Credit: need, types, use and credit institutions. • Planning for family's financial security - savings, investments, insurance, taxation and will 	08
V	<ul style="list-style-type: none"> • Consumer – definition and role. • Consumer problems in rural and urban areas. 	03
VI	<ul style="list-style-type: none"> • Consumerism - its growth, consumer's right and responsibilities. 	10
VII	<ul style="list-style-type: none"> • Unfair trade practices - adulteration, faulty weights and measures etc., • Sources of consumer information - advertisements, labels, packages etc. 	09
VIII	<ul style="list-style-type: none"> • Consumer protection and welfare. • Consumer protection laws. 	08
<p>Suggested Readings:</p> <ul style="list-style-type: none"> • Bhargava, Bela. (2005). Family Resource Management and Interior Decoration. Univ. book home Pvt. Ltd. Jaipur. • Khetarpaul, N and Grover, I. (2004). Consumer Guide for Home Maker – Udaipur: Agratech Pub Academy. • Maneesha Shukul and Veena Gandotra. (2006). Home Management and Family Finance. Dominant Publishers and Distributors, New Delhi. • Mann, M.K. (2004) Home Management for Indian Families. Kalyani Publishers, New Delhi. • Rice, Nickel and Tucker. (1976). Management in Family Finance. John Wiley and Sons., New York • Seetharaman P. Sethi M. (2002). Consumerism Strategies and Tactics. CBS Publishers and Distributors. New Delhi. • Tiwari, O.P. (2000). Consumer Protection Act Allahabad: Allahabad Law Agency. • Verghese, M.N. Ugale, W. N. and Srinivasan, K. (1997). Home Management, New Delhi: New Age International. 		
<p>Suggested Continuous Evaluation Methods:</p> <ul style="list-style-type: none"> • Seminar/Presentation on any topic of the above syllabus • Test with multiple choice questions/short and long answer questions • Attendance 		

B.Sc. Third Year Semester V

Advance Garment Construction

Programme: B.Sc. H. Sc.	Year: Third	Semester: V
Course Code: BHSC-316T	Course Title: Advance Garment Construction	
Course outcomes: The student at the completion of the course will be able to: <ul style="list-style-type: none"> • Learning the use of components of garment construction • Understanding the scientific approach to Anthropometric measurements • Gaining knowledge about use and handling of various types of fabrics • Getting acquainted about pattern and pattern making • Learning and practicing about fitting and common fitting problems 		
Credits:4T+2P	Core Compulsory/Elective	
Max.Marks: 100	Min.PassingMarks: As per UGC/University CBCS norms	
Total No. of Lectures- 90		
Units	Topic	No. of Lectures
I	<ul style="list-style-type: none"> • Taking Measurement: • Anthropometric measurement- Concept and importance 	08
II	<ul style="list-style-type: none"> • Methods of taking body measurement for different garments. • Fabrics for Garment making: 	10
III	<ul style="list-style-type: none"> • Handling of different types of fabrics. • Estimation of material required for different garments. 	08
IV	<ul style="list-style-type: none"> • Working on the Bias • Study of garment components and trims 	04
V	<ul style="list-style-type: none"> • Basics of binding, Frills, Braids, Tassel, Pompons and fringe preparation 	03
VI	<ul style="list-style-type: none"> • Pattern Making: Techniques of pattern making. • Principles and application of flat patterns for different styles 	10
VII	<ul style="list-style-type: none"> • Draping.: concept, technique, advantages and disadvantages • Fitting • Principle of fitting. • Common fitting problems and remedial methods. 	09
VIII	<ul style="list-style-type: none"> • Embroidery stitches: basics of embroidery and types 	08
Practical BHSC-316P Credit: 2	<ul style="list-style-type: none"> • Embroidery stitches- making a display file of various embroideries • Make samples of different types of stitches • Preparation of two consumer's items using contemporary embroidery. • Pattern making: variation in collars, sleeves, yokes • Garments: Gathered frock with Peter pan collar, Salwar Kurta, Saree blouse, Nightie 	30

	<ul style="list-style-type: none"> • Drafting and construction of following garments for women, men and children fancy frock salwar/ pyjama/pyjama kurta (gents)/kameez (ladies) night dress/ gown • Preparation of Yoke, gather, pleats, tucks, shirring, smocking, trimmings 	
Suggested Readings: <ul style="list-style-type: none"> • Anna Jacob: Art of Sewing UBSPD, New Delhi • Bane A –Tailoring, Mc Graw Hill Publication • Reader’s Digest: Complete Guide to Sewing, Association inc New York • Majumdar & Vatsala : Textbook of Clothing Construction, ICMR • Carr& Latham: The Technology of Clothing Manufacture, Blackwell Science • Doongaji & Deshpandey: Basic Process and Clothing Construction. New Raj Book Depot, New Delhi • Jindal R: handbook of Fashion Designing • Frings GS fashion from concept to consumerPrentice Hall Inc New Jersey, United States of America 		
Suggested Continuous Evaluation Methods: <ul style="list-style-type: none"> • Seminar/Presentationonanytopicoftheabovesyllabus • Test with multiple choice questions / short and long answer questions • Attendance 		

Group 1

B.Sc. Third Year Semester VI

Community Nutrition and Education

Programme: B.Sc. H. Sc.	Year: Third	Semester: VI
Course Code: BHSC-321T	CourseTitle:Community Nutrition and Education	
Course Outcomes: The student at the completion of the course will be able to: <ul style="list-style-type: none"> • Develop basic understanding of concept of community nutrition. • Understand the Multifaceted nature, causative factors and preventive strategies of common nutritional problems of India. • Learn Direct and Indirect Nutritional assessment methods for individual, family and community. • Get insight of various aspects of nutrition education. • Get familiarize with the policy and programme operating in India to overcome malnutrition. 		
Credits:6T	Core Compulsory/Elective	
Max. Marks: 100	Min.PassingMarks: As per UGC/University CBCS norms	
TotalNo.ofLectures-90		
Units	Topic	No of Lectures
I	<ul style="list-style-type: none"> • Community nutrition: Definition and importance, • Common nutritional deficiencies; Etiology, prevalence, clinical features, 	15
	<ul style="list-style-type: none"> • Prevention and management of Protein Energy Malnutrition 	

II	(PEM): Marasmus, Kwashiorkor, vicious cycle of malnutrition.	15
III	<ul style="list-style-type: none"> • Micronutrient deficiencies such as Vitamin A deficiency, iron deficiency Anemia, Iodine Deficiency Disorders, flurosis 	15
IV	<ul style="list-style-type: none"> • Assessment of nutritional status: definition and importance • Direct methods – anthropometry, biochemical and clinical examination, dietary surveys • Indirect methods – vital statistics 	15
V	<ul style="list-style-type: none"> • Nutrition education: Meaning, objective, importance, principles and methods of nutrition education. 	15
VI	<ul style="list-style-type: none"> • National programmes and role of national and international agencies in improving nutritional status of the community -ICDS, MDM, SNP, ANP, FAO, WHO, UNICEF, CARE, and UNDP etc. 	15
<p>Suggested Readings:</p> <ol style="list-style-type: none"> 1. Wadhwa A and Sharma S (2003). Nutrition in the Community- A Textbook. Elite Publishing Pvt Ltd, New Delhi. 2. ICMR (1989) Nutritive value of Indian Foods. National Institute of Nutrition, Indian Council of Medical Research, Hyderabad. 3. ICMR (2011) Dietary Guidelines for Indians – A Manual. National Institute of Nutrition, Indian Council of Medical Research, Hyderabad. 4. Understanding Nutrition: Whitney E.N. & Rolfes S.R. 8th Edition West/ Wordsworth.1999 5. Nutritional Research: Current Scenario and Future Trends Editor: K, Krishnaswamy, Oxford and IBH Publication Co. Pvt. Ltd., 2000 6) 6. Nutritional Problems of India: Shukla P.K., Prentice Hall of India Pvt. Ltd., Delhi1982 		
<p>Suggested Continuous Evaluation Methods:</p> <ul style="list-style-type: none"> • Seminar/Presentation on any topic of the above syllabus • Test with multiple choice questions/short and long answer questions • Attendance 		

B.Sc. Third Year Semester VI

Food Service Management

Programme: B.Sc. H. Sc.	Year: Third	Semester: VI
Course Code: BHSC-322T	Course Title: Food Service Management	
<p>Course Outcomes: The student at the completion of the course will be able to:</p> <ol style="list-style-type: none"> 1. Knowledge of type of food services in India 2. Understanding characteristics of various food service outlets 3. Analysis of various resources required for food service establishments 		
Credits:4T+2P	Core Compulsory/Elective	
Max. Marks: 100	Min.PassingMarks: As per UGC/University CBCS norms	
TotalNo.ofLectures-90		
Units	Topic	No of Lectures

I	<ul style="list-style-type: none"> • Introduction to Food Service • Types of food service institutions, 	08
II	<ul style="list-style-type: none"> • Menu planning: Importance and types of menu, Factors affecting menu planning, Menu planning for different kinds of food service units 	10
III	<ul style="list-style-type: none"> • Food Purchase and Storage • Quantity Food production: Standardization of recipes, quantity food preparation techniques 	08
IV	<ul style="list-style-type: none"> • Financial management- Cost concepts, food cost control, pricing, book-keeping, accounting 	10
V	<ul style="list-style-type: none"> • Personnel management- Policies, recruitment, selection, facilities, benefits, trainings and development 	08
VI	<ul style="list-style-type: none"> • Sanitation, hygiene and safety in food service establishment. 	08
VII	<ul style="list-style-type: none"> • Laws governing food service establishments, legal issues. Current issues 	08
Practical BHSC-322P Credit: 2	<ul style="list-style-type: none"> • Preparation and service of Hi teas/ lunches for special occasions and a formal lunch. • Standardization of recipes suitable for fast food outlet, industrial canteen, hospitals, college hostel. • Cost analysis of menu. • Practical exercise on planning, preparation and service in a cafeteria, snack, bar fast food outlet. Management of cafeteria – preparation, costing and fixing of price for meal items. • Analysis of food safety and hygiene in different food instructions. • Visit to canteen attached to hospital and dietary department cafeteria, 3-star hotel/restaurant, 5-star hotel / restaurant, industrial canteen • Plan a diet for <ul style="list-style-type: none"> a. Protein energy mal-nutrition b. Vitamin A deficiency c. Iron Deficiency Anemia d. Planning nutritive recipe 	30

Suggested Readings:

- West B Bessie & Wood Levelle (1988) Food Service in Institutions 6th Edition Revised By Hargar FV, Shuggart SG, & Palgne Palacio June, Macmillian Publishing Company New York.
- Sethi Mohini (2005) Institution Food Management New Age International Publishers
- Knight J B & Kotschevar LH (2000) Quantity Food Production Planning & Management 3rd edition John Wiley & Sons
- Philip E Thangam (2008) Modern Cookery for teaching and Trade Part I & II Orient Longman
- Taneja S and Gupta SL (2001) Entrepreneurship development, Galgotia Publishing
- Dinesh Kumar, Food service and catering management.

Suggested Continuous Evaluation Methods:

- Seminar/Presentation on any topic of the above syllabus
- Test with multiple choice questions/short and long answer questions
- Attendance

Group 2

B.Sc. Third Year Semester VI

Community Development

Programme: B.Sc. H. Sc.	Year: Third	Semester: VI
Course Code: BHSC-323T	Course Title: Community Development	
Course Outcomes: The student at the completion of the course will be able to: <ol style="list-style-type: none"> 1. Learn the history of community development programs in India 2. Get acquainted with extension activities for community development 3. Gain knowledge of extension methods and approaches 4. Awareness on developmental programmes and schemes 		
Credits : 4T+2P	Core Compulsory/Elective	
Max. Marks: 100	Min. Passing Marks: As per UGC/University CBCS norms	
Total No. of Lectures- 90		
Units	Topic	No of Lectures
I	<ul style="list-style-type: none"> • History of Community Development: Definition, objectives, steps and process, • Role of community development worker 	02
II	<ul style="list-style-type: none"> • Pre and post-independence development programmes- Shriniketan rural reconstruction, Gurgaon experiment, Marthandum project, Gandhian constructive programme, Etawah pilot project, Indian village service, Firka development scheme, Nilokheri experiment etc. 	08
III	<ul style="list-style-type: none"> • Schemes and programmes for community development-JRY, SGSY, TYSEM, DWCRA, CRY, SITRA, MNREGA, ICDS and other latest programmes 	10
IV	<ul style="list-style-type: none"> • Participatory tools and Approaches 	10
V	<ul style="list-style-type: none"> • Concept and elements of adoption and diffusion process. • Innovation– meaning and perceived attributes 	06
VI	<ul style="list-style-type: none"> • Adoption and diffusion of innovation: concept and meaning, process • types of innovation decision, • Consequences of innovations. 	10
VII	<ul style="list-style-type: none"> • Adoption: meaning, definition, process and stages • Factor affecting adoption and innovation-decision process and constraints. 	09
VIII	<ul style="list-style-type: none"> • Adopter categories- concept and types. • Different terms used in diffusion of innovation and adoption process: Rate of adoption, over adoption, innovativeness, dissonance, rejection, discontinuance. 	08

Practical BHSC-323P Credit: 2	<ol style="list-style-type: none"> 1. Visit of Local NGO 2. Analysis of different development programmes 3. Exercise on PRA tools and techniques 4. Making different PRA approaches 5. Understanding community and its various aspects 	30
<p>Suggested Readings:</p> <ol style="list-style-type: none"> 1. Birendra Kumar and Hansra, B.S. 2000. Extension education for human resource development. Concept publishing company, New Delhi. 2. Dhama, O.P. and Bhatnagar, O.P. 1987. Education and communication for development. Oxford and ibh publishing co. Pvt. Ltd. 3. Ray, G.L. 1991. Extension communication and management. Kalyani publishers, Kolkata. 4. Rayadu, C.S. 1997. Communication. Himalaya publishing house, Mumbai. 5. Rogers, E.M. And Shoemaker, F.F.1971. Communication of innovations. The free press, New York. 		
<p>Suggested Continuous Evaluation Methods:</p> <ul style="list-style-type: none"> • Seminar/Presentation on any topic of the above syllabus • Test with multiple choice questions / short and long answer questions • Attendance 		

B.Sc. Third Year Semester VI

Theories of Human Development

Programme: B.Sc. H. Sc.	Year: Third	Semester: VI
Course Code: BHSC-324T	Course Title: Theories of Human Development	
<p>Course Outcomes: The student at the completion of the course will be able to:</p> <ol style="list-style-type: none"> 1. Apply the theoretical approaches to work with human being across life span 2. Learn about the classic human development theories 3. Develop professional attitude for working with human beings across life span 4. Explain the need and importance of studying human growth and development across life span. 5. Identify the biological and environmental factors affecting human development 		
Credits: 6 T	Core Compulsory/Elective	
Max. Marks: 100	Min. Passing Marks: As per UGC/University CBCS norms	
Total No. of Lectures-90		
Units	Topic	No of Lectures
I	<ul style="list-style-type: none"> • Early views on human development: 	08
II	<ul style="list-style-type: none"> • Western and Indian Perspective of Human Development 	10
III	<ul style="list-style-type: none"> • Psychosexual Development Theory and Psychoanalytic Theory of Personality – Sigmund Freud 	15
IV	<ul style="list-style-type: none"> • Psychosocial Theory – Erik Erikson 	15
V	<ul style="list-style-type: none"> • Social Learning Theory – Albert Bandura 	08
VI	<ul style="list-style-type: none"> • Learning Theories – Watson, Pavlov and Skinner 	10
VII	<ul style="list-style-type: none"> • Cognitive Development Theory – Jean Piaget • Socio-Cultural theory of Cognitive Development – Vygotsky 	09

VIII	<ul style="list-style-type: none"> • Kohlberg's Moral Judgement Theory • Ecological Theory–Urie Bronfenbrenner 	15
<p>Suggested Readings:</p> <ol style="list-style-type: none"> 1. Bhangaokar, R., & Kapadia, S. (in press). Human Development Research in India: A historical overview. In G. Misra (Ed.), Hundred years of Psychology in India. New Delhi: Springer. 2. Feldman, R., & Babu, N. (2009). Discovering the life span. New Delhi: Pearson 3. Kakar, S. (1998). The inner world. Psychoanalytic study of childhood and society in India. Delhi: Oxford University Press. 4. Kapadia, S. (2011). Psychology and human development in India. Country paper. International Society for the Study of Behavioural Development Bulletin Number 2, Serial No. 60, pp.37-42. 5. Keenan, T., Evans, S., & Crowley, K. (2016). An introduction to child development. Sage. 6. Lightfoot, C., Cole, M., & Cole, S. (2012). The development of children (7th ed.). New York: Worth Publishers. 7. Santrock, J. (2017). A topical approach to life span development (9th ed.). New NY.: McGraw-Hill Higher Education. 8. Singh, A. (2015). Foundations of Human Development: A life span approach. ND: Orient Black Swan. 9. Walsh, B.A., Deflorio, L., Burnham, M.M., & Weiser, D.A. (2017). Introduction to Human Development and Family Studies. NY: Routledge 		
<p>Suggested Continuous Evaluation Methods:</p> <ul style="list-style-type: none"> • Seminar/Presentation on any topic of the above syllabus • Test with multiple choice questions/short and long answer questions • Attendance 		

Group 3

B.Sc. Third Year Semester VI Traditional Textiles of India

Programme: B.Sc. H. Sc.	Year: Third	Semester: VI
Course Code: BHSC-325T	Course Title: Traditional Textiles of India	
<p>Course Outcomes:</p> <p>The student at the completion of the course will be able to:</p> <ul style="list-style-type: none"> • Appreciation of diverse and rich textiles heritage of India • Learning about traditional embroideries from different parts of the country • Comprehending about traditional textiles from different parts of the country • Understanding role and significance of Khadi • Scientific knowledge about conservation of textiles 		
Credits: 6T	Core Compulsory/Elective	
Max. Marks: 100	Min. Passing Marks: As per UGC/University CBCS norms	
Total No. of Lectures-90		
Units	Topic	No of Lectures
I	<ul style="list-style-type: none"> • Dyed and printed textiles: Kalamkari (painted and block printed), Patola, bandhani (tie and dye) of Gujarat and 	12

	Rajasthan. Ikat of Orissa	
II	<ul style="list-style-type: none"> • Woventextiles: Brocades of Uttar Pradesh, Baluchar of West Bengal, Brocades of South India, 	10
III	<ul style="list-style-type: none"> • Muslin of Bengal, Shawls of Kashmir 	09
IV	<ul style="list-style-type: none"> • Embroidered Textiles: Chikankari of Lucknow, Phulkari of Punjab, Kantha of Bengal, Kashidakari of Kashmir, 	10
V	<ul style="list-style-type: none"> • Kasuti of Karnataka, Zariembroidery, Embroidery of Kutch and Kathiawar. 	12
VI	<ul style="list-style-type: none"> • Status of traditional textiles in modern India: Evolution and socio economic significance of khadi, hand loom and handicrafts sector 	10
VII	<ul style="list-style-type: none"> • Initiatives/Programmes by organizations in sustenance of Indian textile craft 	10
VIII	<ul style="list-style-type: none"> • Conservation of textiles: factors affecting deterioration of textiles, care and storage of textiles 	10

Suggested Readings:

- Khanna K, Gupta S, Seth R, Mahna R, Rekhi T (2004). The Art and Science of Cooking: A Practical Manual, Revised Edition. Elite Publishing House Pvt Ltd.
- Raina U, Kashyap S, Narula V, Thomas S, Suvira, Vir S, Chopra S (2010). Basic Food Preparation: A Complete Manual, Fourth Edition. Orient Black Swan Ltd.
- Bamji MS, Krishnaswamy K, Brahmam GNV (2009). Textbook of Human Nutrition, 3rd edition. Oxford and IBH Publishing Co. Pvt. Ltd.
- Srilakshmi (2007). Food Science, 4th Edition. New Age International Ltd.
- Wardlaw and Insel MG, Insel PM (2004). Perspectives in Nutrition, Sixth Edition. Mosby.
- Chadha R and Mathur P (eds). Nutrition: A Lifecycle Approach. Orient Blackswan, Delhi. 2015 P13-

Suggested Continuous Evaluation Methods:

- Seminar/Presentation on any topic of the above syllabus
- Test with multiple choice questions/short and long answer questions
- Attendance

B.Sc. Third Year Semester VI

Interior Designing and Decoration

Programme: B.Sc. H. Sc.	Year: Third	Semester: VI
Course Code: BHSC-326T	CourseTitle: Interior Designing and Decoration	
Course outcomes: The student at the completion of the course will be able to:		
<ul style="list-style-type: none"> • Understanding on the concepts designing and decoration • Understanding the various techniques of designing and decoration • Use of resources in designing and decoration 		
Credits: 4T+2P	Core Compulsory/Elective	

Max. Marks: 100		Min. Passing Marks: As per UGC/University CBCS norms
Total No. of Lectures-90		
Units	Topic	No of Lectures
I	<ul style="list-style-type: none"> • Elements and principles of design in interior designing and decoration 	03
II	<ul style="list-style-type: none"> • Principles of Interior Design • Basics of Decorative styles and accessories 	10
III	<ul style="list-style-type: none"> • Lighting - Definition – Objectives – Functions and Importance of lighting. • Types of lighting - Natural and Artificial lighting. • Methods of lighting - direct, semi-direct, In-direct, semiindirect and diffused lighting. 	09
IV	<ul style="list-style-type: none"> • Lighting accessories – Selection of lamps and lamp shades. • Lighting fixtures – Structural lighting, Free-standing or portable - Table lamp, Floor lamp, standard lamp fixtures and office task light luminaries. 	08
V	<ul style="list-style-type: none"> • Accessories - Definition and importance in interiors, • Classification – functional and decorative • Factors influencing the selection of accessories, Placement, location and background for accessories. 	03
VI	<ul style="list-style-type: none"> • Kinds of accessories - Decorative - mural, photographs, pictures, artefacts, drawings, antiques and Functional - books, Mirror, Clock, accent furniture, indoor plants and flower arrangement as miscellaneous accessories. • Compare the types of accessories and choose the appropriate lighting in interiors. 	10
VII	<ul style="list-style-type: none"> • Art and Crafts – definition, kinds of art and crafts-pot painting, idols, sculptures, glass painting, wall art, wall hanging, pillows, cushions, pebble art, wood art, shell art, origami, models, lamps and vases, baskets, doll making, bamboo crafts, folk arts and crafts of India, 	09
VIII	<ul style="list-style-type: none"> • Application of arts and crafts in interiors 	08
Practical BHSC-326P Credit: 2	<ul style="list-style-type: none"> • Application of elements and principles of interior design and Decoration • Preparation of utility and decoration articles by using various painting/printing techniques • Calligraphy Use of floor decoration in interiors • Stationery designs; cover designs for books, magazines, illustrations, lettering construction etc. • Accessories; various types, materials and techniques; pottery, collage, handicrafts, utility articles, paper mache items, • Paper sculpture, poster making, greeting cards, fabric painting, glass painting, gift wrapping etc. 	30

Suggested Readings:

- Dorothi, S. et al. (1980). Introduction to Interior Design. New York: Mc Millan.
- Faulkner and Faulkner. (1975). Inside Today's Home. New York: Holt, Rinehart and Winston.
- Gewther, M. (1970). The Home, its Furnishings and Equipment U.S.A. Mc. Graw Hill.
- Mike, L. (1986). The Complete Interior Decoration. United Kingdom: Mc Donald.
- Ruth, M. (1975). The Home and its Furnishings, U.S.A.: Mc. Graw Hill.
- Seetharaman P. Sethi M. (2002). Interior Design and Decoration. CBS Publishers and Distributors. New Delhi.
- Chaudhari, S.N. 2006, Interior Design. Aavishkar Publishers, Jaipur.
- Premavathy Seetharaman and Parveen Pannu, (2009). Interior Design and Decoration. CBS Publishers and Distributors Pvt Ltd. New Delhi.
- Goldstein, (1976). Art in Every Day Life. Oxford and IBH Publishing House.
- Kasu, A.A. 2005, Interior Design, Ashish Book Centre Delhi.
- Andal. A and Parimalam.P, (2008). A Text Book of Interior Decoration. Satish Serial Publishing House.

Suggested Continuous Evaluation Methods:

- Seminar/Presentation on any topic of the above syllabus
- Test with multiple choice questions / short and long answer questions
- Attendance