

रही पाठ्यक्रम

SRI DEV SUMAN UTTARAKHAND UNIVERSITY

Badshahithaul, Tehri Garhwal



*FACULTY OF B.Sc. HOME SCIENCE
UNDER GRADUATE PROGRAM*

**THREE YEAR PROGRAM
(ANNUAL SYSTEM)**

SYLLABUS OF COURSES TO BE OFFERED

B.Sc. Home Science

(Annual System)

Learning outcomes of 3yr degree programme BSc. Home Science:

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

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

GENERAL INSTRUCTIONS

- The duration of the course Bachelor of Science in Home Science (B.Sc. Home Science) shall be of three years.
- In each year, there shall be 09 theory papers and 03 practical paper.
- Students have to opt a mandatory additional core paper of Environmental Sciences, in the second year. The total marks allotted to the paper will be 100. It is mandatory to pass the course and the number earned by the students will be added to the cumulative result. In case, student is unable to pass the course then he/ she has to rewrite the paper in the third year. No final degree will be awarded if the students are unable to pass the course till the end of third year.
- Passing marks for the theory paper and practical is 40 per cent.
- 80 % attendance of the student is mandatory in the course.
- Each theory papers will be of 50 marks.
- The practical will be of 50 marks.
- The allotted time for each theory paper is 2:30 min.

INSTRUCTIONS FOR PRACTICAL

- There will be 03 compulsory practical each year.

- 80 % attendance of the student is mandatory in the practical.
- Practical record file must be maintained by the student. Record file must be duly signed by the concerned teacher of the department.
- The students have to submit the practical record file to the Department/ College, for record documentation.
- The practical exam will be held on the date fixed by the University.
- The sum of practical exam marks will be forwarded to University jointly by the external and internal examiner.

Structure of the Question Paper (Theory)

SECTION	QUESTIONS	MARKS
SEC-A	Section-A will have 12 questions and students have to attempt all of them. Each question will be of 01 marks.	12x1=12
SEC-B	Section-B will have 10 questions and students have to attempt any 6 questions. Each question will be of 3marks.	6X3= 18
SEC-C	Section-C will have 4 questions and students have to attempt any 7 questions. Each question will be of 5marks.	4X5= 20

COURSE OUTLINE

FIRST YEAR		
CODE	PAPER NAME	MARKS
THEORY		
B.Sc. (HA01)	Principles of Human Nutrition	50
B.Sc. (HA02)	Food Preservation -	50
B.Sc. (HA03)	Introduction to Clothing and Textiles	50
B.Sc. (HA04)	Textile Designing and Finishes	50
B.Sc. (HA05)	System Dynamics and Management of Resources	50
B.Sc. (HA06)	Consumer Education	50
B.Sc. (HA07)	Introduction to Human Development	50
B.Sc. (HA08)	Life span Development I	50
B.Sc. (HA09)	Human Physiology	50
PRACTICAL		
B.Sc. (HA10)	Food Preservation	50
B.Sc. (HA11)	Introduction to textile its designing and finishes	50
B.Sc. (HA12)	Human Physiology	50
SECOND YEAR		
THEORY		
B.Sc. (HA13)	Introduction to Extension education	50
B.Sc. (HA14)	Communication and Instructional technology -	50
B.Sc. (HA15)	Nutrition: A life cycle approach	50
B.Sc. (HA16)	Therapeutic Nutrition and Dietetics	50
B.Sc. (HA17)	Introduction to Housing and Space Design	50
B.Sc. (HA18)	Introduction to Interior Designing	50
B.Sc. (HA19)	Life Span Development II	50
B.Sc. (HA20)	Population Dynamics	50
B.Sc. (HA21)	Fashion studies	50
PRACTICAL		
B.Sc. (HA22)	Communication and Instructional Technology	50
B.Sc. (HA23)	Normal and Therapeutic Nutrition	50
B.Sc. (HA24)	Fundamentals of Interior Designing	50
THIRD YEAR		
THEORY		
B.Sc. (HA25)	Clothing Construction and Flat pattern making	50
B.Sc. (HA26)	Traditional Indian Textiles	50
B.Sc. (HA27)	Food standard and Quality control	50
B.Sc. (HA28)	Nutrition Education	50
B.Sc. (HA29)	Early Childhood Education and Management	50
B.Sc. (HA30)	Children with Disability	50
B.Sc. (HA31)	Financial Management	50
B.Sc. (HA32)	Entrepreneurship Development	50
B.Sc. (HA33)	NGO Management and CSR	50
PRACTICAL		
B.Sc. (HA34)	Clothing Construction and Flat pattern making	50
B.Sc. (HA35)	Food Quality and its preservation.	50
B.Sc. (HA36)	Early Childhood Management and Special Education	50

COURSE DETAILS

FIRST YEAR

B.Sc. (HA01)Principles of Human Nutrition

Units	Course details
Unit 1	Terms and definitions used in nutrition History of nutrition and important landmarks Classification and functions of food
Unit 2	Macro nutrients (i) Carbohydrates: Types of carbohydrates in food, digestion, metabolism and functions of carbohydrates, Health conditions affected by excess and lack of carbohydrates.
Unit 3	(ii) Lipids: Types of lipids in foods, digestion, metabolism and functions of lipids, Health problems associated with lipids (iii) Proteins: Amino acids as building blocks of proteins, classification, structure of protein, metabolism and functions of protein, Health conditions affected by protein. (iv) Energy source: Dietary carbohydrates, proteins, fats and alcohol. three basic functions of energy, basal metabolic rate, physical activity and thermogenesis and factors influencing them.
Unit 4	Micronutrients Vitamins: Requirement, sources, function, toxicities and signs and symptoms of deficiencies of: Fat soluble vitamins; water soluble vitamins Minerals: Requirement, sources, functions, deficiencies and toxicities Water its metabolism, sources, distribution of water, structural and regulatory functions

Recommended readings:

- Wilson E D, Fisher K H and Garcia P A 1980 Principles of Nutrition. Jhon Wiley & Sons, NewYor
- Bamji M S ; Rao P N and Reddy V; 1997 Textbook of Human Nutrition. Oxford and IBH Publishing Co.

B.Sc. (HA02)Food Preservation

Units	Course details
Unit 1	Concept and significance of food preservation; need, benefits and aims Food deterioration, causes of food spoilage, factors affecting it and control of microorganism, enzymes and other factors, Selection and purchase of fruits and vegetables for preservation.
Unit 2	Principles and method of food preservation • Principles and methods of food drying and concentration- sun drying, freeze drying, spray drying, drying by osmosis, factors in control of drying Preservation by the use of heat- Sterilization, pasteurization, blanching and canning. Preservation by cold- Distinction between refrigeration and freezing; freezing preservation- air freezing, quick freezing, slow freezing, cryogenic freezing

Unit 3	Preservation by use of chemical preservatives, salt, sugar and other additives Principles of food preservation by irradiation and refrigerated gas storage of various foods.
Unit 4	Storage stability of preserved products, objective test of quality of stored like odour, texture etc. Effect of food preservation on nutritive value of food. Enhancing nutritional quality of the food Fermentation: role of microorganism and benefits of fermentation. Sprouting, food fortification, supplementation and enrichment.

Recommended readings:

- Manay, Sakuntala and Shadaksharaswamy, M. (2001). Food Facts and Principles, 2nd edition. New Age International Publishers.
- Srilakshmi, B.(2001). Food Science. New Age International Publishers.
- Potter, N.N. and Hotchkiss, J.H., (1996). Food Science Vth ed. CBS Publishers, New Delhi.

B.Sc. (HA03)Introduction to Clothing and Textiles

Units	Course details
Unit 1	Textile fibres and their properties Primary and secondary properties of textile fibres with reference to their effect on fibre characteristics, structure of fibres Classification of fibres Origin, production, manufacturing and properties of various fibres: Natural- cotton, linen, jute, hemp, ramie, wool, silk, asbestos. Man-made-rayon, polyester and nylon.
Unit 2	Basic principle of yarn making: Mechanical spinning (cotton system, wool system, worsted system), Chemical spinning (wet, dry and melt) Types of yarns: Staple, Filament, Simple, complex Properties of yarns: Yarn numbering systems and twist. Textured yarns: Classification, manufacture and properties
Unit 3	Weaving: Its principles and basic weaves, parts and functions of the loom Weaves : Classification, construction, characteristics and usage
Unit 4	Knitting: Classification, construction, characteristics and usage, Non-woven and felts-construction, properties and usage.

Recommended readings:

- Cobman, P.B (1985) Textiles Fibre to Fabrics. 6th edition Mc Graw Hill Book Co, US.
- Sekheri S, (2013) Text book of Fabric Science, Fundamentals to finishings PHI Learning, Delhi.

B.Sc. (HA04)Textile Designing and Finishes

Units	Course details
Unit 1	Introduction to textile design: a) woven designs: simple and compound structures of fabrics b) Decorative designs : Naturalistic, conventional, abstract and geometric designs Application of various design principles in textile designing
Unit 2	Introduction to fabric finishes: a) Processes of removing impurities from fabrics, scouring, desizing, degumming, carbonizing b) Basic finishes that alter hand or texture: Felting, singeing, stiffing, decatizing c) Surface finishes: Bleaching, delustering, calendaring, beetling, napping, flocking, burnt out design, acid design, plisse design, tentering shearing and brushing. d) Functional finishes: water proof and water repellent finish, shrinkage control, wrinkle resistance, durable press and flame retardant finish
Unit 3	Dyes and their classification Dyeing techniques: solution dyeing, fibre and yarn dyeing, piece dyeing
Unit 4	Method of printing, block, screen, stencil, roller, transfer and resist printing, tie and dye and batik

Reccomended readings:

- Birkar,H.1968. Screen Printing. New York, Sterling Publishing Co. Inc. .
- Muehling, E. 1967. The book of Batik. London, Mills and Boons Limited.
- Anderson, F.1974. Tie- Dyeing and Batik. London, Octopus Editorial Production by Berkeley Publishers Ltd.
- Clake, W. 1974. An Introduction to Textile Printing.London, Newness Butter Worth.

B.Sc. (HIA05)System Dynamics and Management of Resources

Units	Course details
Unit 1	<p>Rural households and farms as ecosystem: Systems approach to management, System concept applied to households: definition and meaning of family and household.</p> <p>Family management system in a changing world: family's adoption to changing resource environment and implications for quality of life of rural- urban families.</p> <p>Factors affecting management of resources in urban-rural home/household Stages of family life cycle</p>
Unit 2	<p>Resource classification, availability, generation and allocation a) Role and scope of resources b) Classification and characteristics of resources, national and global, human and material, economic and non-economic. c) Time and Energy as resources</p> <p>Principles in the use of resources; scarcity, utility, accessibility, exchange, transferability, substitution, reuse and investing.</p>
Unit 3	<p>Definition, concept and process of management Motivation for management – values goals and standards and their origin classification, role in management, interlinking of values goals and standards.</p>
Unit 4	<p>Decision making : Role and scope, Classification- technical, economic, social, legal, political decision, Decision making process, Decision conflict</p>

Recommended readings:

- Koontz.H. and O'Donnel C., 2005, Management – A systems and contingency analysis of managerial functions. New York: McGraw-Hill Book Company
- Kreitner. 2009, Management Theory and Applications, Cengage Learning: India
- Rao V.S. and Narayana P.S., Principles and Practices of Management, 2007, Konark Publishers Pvt. Ltd.

B.Sc. (HA06)Consumer Education

Units	Course details
Unit 1	Definition of consumer, rural vs urban consumer characteristics and problems
Unit 2	Role of consumers in the economy, National Income, Per Capita Income, Household wise distribution of income.Changing nature of the business world –e-commerce, e-business.Types of consumer problems – products and service related, investment and infrastructure related, Causes and solutions
Unit 3	Consumer education and empowerment, Consumer protection, History of consumer movement in the developed and developing countries. Consumer rights and responsibilities, Consumer organizations – origin, functioning, role and types. Consumer protection and Government legislation – Act and orders.
Unit 4	Consumer cooperatives – role, history and growth in India, PDS Kendriya Bhandars. Basic legislative framework for consumer protection in India, Consumer Protection Act 1986 COPRA, Alternative redressal mechanisms, Mediation centres.Standardization and quality control measures: ISI, FPO, AGMARK, ISO, Eco mark, Wool mark, Silk mark, Cotton mark, Handloom mark, BEE star labelling and others

Recommended readings:

- Khanna S.R., Hanspal S., Kapoor S. &Awasthi H.K., 2007, Consumer Affairs, Universities Press India Pvt. Ltd.
- Sawhney, H.K. & Mital, M.,2007, Family Finance & Consumer Studies, Elite Publishing House Pvt. Ltd.
- Seetharaman, P. and Sethi, M.,2001, Consumerism: Strength and Tactics, New Delhi: CBS Publishers.

B.Sc. (HA07)Introduction to Human Development

Units	Course details
Unit 1	Importance of Human Development from a Life-span perspective. Issues in Human Development. Stages of Human Development
Unit 2	Determinants of development; biological and environmental; Principles of Growth and Development: Norms and Milestones Definition of growth and development, difference between growth and development, factor affecting development, Areas of development
Unit 3	Methods of Studying Human Development, steps of studying behaviour scientifically, non-experimental and experimental studies, naturalistic studies; clinical studies; cross-sectional and longitudinal designs
Unit 4	Major development theories: Freud's psychosexual theory, Erikson's psychosocial theory, Piaget's cognitive development stage theory and Kohlberg's moral understanding theory.

Recommended readings:

- Papalia DE and Olds SW; 1978 Human Development. McGraw Hill. New Y ork
- Munsinger H.; 1971 Fundamentals of Child Development. Holt Reinhart and Wilson Inc.
- Hall, Calvin S. and Lindsey G 1978 Theories of Personality; Jhon Wiley & Sons

B.Sc. (HA08)Life span Development I

Units	Course details
Unit 1	Prenatal period: Prenatal development stages: genetic and environment factors.
Unit 2	Infancy: The neonate up to 4 weeks: physical, physiological, cognitive and social capabilities. Four weeks up to 2 years. Physical and motor, social and emotional, cognitive and language development. Early Environment and its importance, need for desirable child rearing, growth monitoring
Unit 3	Early childhood years: Development milestones and antecedent influences in physical and motor, social, emotional, cognitive and language development, play activities.
Unit 4	Middle childhood age: Physical and motor skills, developmental factors, language and intellectual development. Emotional development, influence of positive and negative emotions; factors influencing emotions, social and moral development. The function of family, school and community in the growth of children during middle childhood.

Recommended readings:

- Berk, L. E. (2007). Development through the lifespan. Delhi: Pearson Education
- Rice, F. P. (1998). Human Development: A lifespan approach. New Jersey: Prentice Hall.
- 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 Black Swan.

B.Sc. (HA09) Human Physiology

Units	Course details
Unit 1	Introduction to Human body: Organs, tissue and cell, cell structure, cellular organelles and their functions. Introduction to blood and lymphatic system. Blood - Composition and functions, Plasma Protein -Composition and functions. Lymphatic system: Lymphatic system structure and function Structure and functions of lymph node and lymphatic ducts (Right lymphatic duct & Thoracic Duct)
Unit 2	Cardiovascular system: Structure of heart, circulations, cardiac output (Definition and factors affecting), blood pressure (Definition and factors affecting) Endocrine system Endocrine system Overview of endocrine system, feedback mechanism/cascade. Structure of main endocrine glands and their functions: Pituitary, Thyroid, and Pancreatic hormones
Unit 3	Digestive system: Overview of the Gastrointestinal Tract, organization and functions. Structure and functions of: Stomach, Liver, Gallbladder, Pancreas
Unit 4	Excretory System: Structure and functions of kidney and nephrons, process of urine formation.

Recommended readings:

- Auther, J. Vendors, Human Physiology Mechanism of body function McGraw Hill Book Co.
- 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.

B.Sc. (HA010) Food Preservation (Practical)

- Preparation of fruit juices/ squashes/ syrup.
- Preparation of jams/ jellies/ sauces/ chutney/ murabbas.
- Preparation of dehydrated vegetables and fruit toffees
- Preparation of pickles, cereals/ legume product using food preservation and processing techniques.
- Preparation of weaning mix through sprouting, malting using indigenous food crops.
- To prepare food products using fermentation/sprouting methods.
- Visit to food factory/ women self-help group working on areas of food preservation.

Recommended readings:

- Manay, Sakuntala and Shadaksharaswamy, M. (2001). Food Facts and Principles, 2nd edition. New Age International Publishers.
- Srilakshmi, B.(2001). Food Science. New Age International Publishers.
- Potter, N.N. and Hotchkiss, J.H., (1996). Food Science Vth ed. CBS Publishers, New Delhi.

B.Sc. (HA011) Introduction to textile its designing and finishes (Practical)

- Hand loom: Parts, Accessories and their use.
- Fibre Identification tests –Visual, burning, microscopic and chemical
- Collection of natural, manmade and synthetic fibre/fabric samples.
- Yarn Identification – Single, ply, cord, textured, elastic, monofilament, multifilament and spun yarn
- Weaves- Identification, representation in graphs and collection of samples.
- Knitting- Knitting machine and its parts; accessories and their use.
- Identification and collection of knitting samples.
- Basic fabric finishes: scouring, bleaching and mercerization
- Preparations of tie and dye samples using various techniques.
- Preparation of batik samples using various techniques.
- Preparation of block printing sample.
- Preparation of screen printing sample.
- Prepare an article with the use of any three style of dyeing and printing.
- Visit to any textile unit/ NGO working in the direction of textile designing and prepare a report on it.

Reccomended readings:

- Birkar, H. 1968. Screen Printing. New York, Sterling Publishing Co. Inc.
- Muehling, E. 1967. The book of Batik. London, Mills and Boons Limited.
- Anderson, F. 1974. Tie- Dyeing and Batik. London, Octopus Editorial Production by Berkeley Publishers Ltd.
- Clake, W. 1974. An Introduction to Textile Printing. London, Newness Butter-Worth.

B.Sc. (HA012) Human Physiology (Practical)

- Identification of Elementary tissues.
- Recording pulserate, heart sound and blood pressure measurement.
- Visit in nearby pathology lab to observe the determination of blood components, blood group, blood glucose level and haemoglobin.
- Visit to nearby hospital/primary health centre /*aganwadi* centres to examine first aid in wounds, shock, burn, heat bite, artificial respiration and bed making for the patient.

Recommended readings:

- Auther, J. Vendors, Human Physiology Mechanism of body function McGraw Hill Book Co.
- 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.

SECOND YEAR

B.Sc. (HA013) Introduction to Extension education

Units	Course details
Unit 1	Meaning of extension education and its relationship with other science. Extension education as a discipline with special reference to Home Science extension education. Scope of Home Science extension
Unit 2	Extension: Concept - Extension: concept, goals, philosophy and history. Adult learning Components of Extension, Principles of extension Relationship between communication and extension - role of extension in development
Unit 3	Methods and Approaches of Extension:Stakeholders in development, People's participation and social mobilization in development, Extension systems- types, advantages and disadvantages. Diffusion of innovation and adoption,Extension methods and approaches - classification, characteristics and selection, PRA and RRA.
Unit 4	Development Programmes: Development issues and goals- national and international perspectives,National Development Programmes – goals, strategies, structure and achievements, Analysis of contemporary national development programmes- objectives, clients, salient features, outcomes and communication support. Behaviour Change Communication strategies in development programmes

Recommended readings:

- Dhama, O.P. and Bhatnagar, O.P. (1980). Extension and Communication for Development. Oxford and IBH.
- Dhama, O.P. (1986) Extension and Rural Welfare. Rural Prasad and Sons, Agra.
- Singh, Ranjit (1987). A Text Book of Extension Education, SahityaKala Prakashan,Ludhiana.
- Supe S.V. (1987). An Introduction to Extension Education , Oxford and IBH Publishing Co. New Delhi.

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B.Sc. (HA014) Communication and Instructional technology

Units	Course details
Unit 1	Concept of Communication- Meaning, function, problem and barrier Elements of communication process. Awareness of self in communication, Intrapersonal Communication.
Unit 2	Interpersonal Communication Concept, types and functions of interpersonal communication, Dyadic, small and large group communication, Stages in human relationship development, Small group communication: types and function Non-projected communication aids chalkboard, flat pictures, diagrams, photographs, charts, posters, flash cards
Unit 3	Mass Media Mass Media- characteristics and significance of print, electronic and web based media Print Media: types, nature, characteristics, reach, access. Radio: types, nature, characteristics, reach, access. Television and cinema: types, nature, characteristics, reach, access. ICTs: types, characteristics, reach and access.
Unit 4	Instructional Technology- meaning, importance, scope, selection, use and classification

Recommended readings:

- Dhama Barker, L. (1990). "Communication", New Jersey: Prentice Hall, Inc.
- Baran, S. (2014) Mass Communication Theory. Wadsworth Publishing
- Dhama, O.P. and Bhatnagar O.P. Education and communication for development (1985) Oxford and IBH Publishing Co. Pvt, New Delhi.
- Devito, J. (1998) Human Communication. New York: Harper & Row.
- Patri and Patri (2002); Essentials of Communication. Greenspan Publications

B.Sc. (IIA015) Nutrition: A Life Cycle Approach

Units	Course details
Unit 1	Principles of meal planning: Food group and food exchange list, factor affecting meal planning and food related behaviour, method of assessment of nutrient requirements, dietary guidelines for Indians.
Unit 2	Nutrition during childhood : Growth and development, growth reference/ standards, RDA, nutritional guidelines, nutritional concerns and healthy food choices for infants, preschool children, school children and adolescence.
Unit 3	Nutrition during adulthood: RDA, physiological changes, nutritional guidelines nutritional concerns and healthy food choices for adults and elderly.
Unit 4	Nutrition during pregnancy and lactation: RDA, physiological changes, nutritional guidelines nutritional concerns and healthy food choices for pregnant and lactation mothers.

Recommended readings:

- Nutrition and Dietetics: B. Srilakshmi, New age international.
- Life Cycle Nutrition: Sari Edelstein, Jones and Bartlette Publishers Inc
- Fundamentals of Food, Nutrition and Diet Therapy: Sumati R Mudambi and MV Rajagopal, New age international
- Textbook of Human Nutrition: Anjana Agarwal and Shobha A Udipi, Jaypee brothers Medical Publishers(P) Ltd.
- Textbook of Nutrition and Dietetics: Kumud Khanna, Sharda Gupta and *et.al.*

B.Sc. (HA016) Therapeutic Nutrition

Units	Course details
Unit 1	Principles of nutrition care: nutrition care process, therapeutic adaptation of the normal diet, progressive diets: clear fluid, full fluid, soft and regular.
Unit 2	Metabolic alteration during fever of short and long duration, etiology, clinical features and nutritional management of infections and fevers: typhoid, tuberculosis. Etiology, symptoms and principles of dietetic management in liver disorders : Hepatitis, cirrhosis
Unit 3	Etiology, clinical features, and nutritional management of weight imbalances, overweight/ obesity, underweight. Eating disorders and its types. Clinical characteristics, risk factors, dietary management and complications in diabetes mellitus.
Unit 4	Etiology, clinical features, basic diagnosis and nutritional management of diarrhea, constipation, peptic ulcer, gastritis, ulcerative colitis. Risk factors and principles of nutritional therapy in hyperlipidemias, atherosclerosis and heart diseases. Principles of nutritional therapy in Kidney diseases: Glomerulonephritis, nephrosis, renal failure, urolithiasis (kidney stones)

Recommended readings:

- Dietetics: B Srilakshmi, New age international
- Normal and therapeutic nutrition: C.H Robinson
- Clinical Dietetics and Nutrition: F.P Antia and Philip Abraham
- Manual of Nutrition and Therapeutic Diet: T.K Indrani
- Principles of Therapeutic Nutrition and Dietetics: Avantika Sharma

B.Sc. (HA017) Introduction to Housing and Space Design

Units	Course details
Unit1	Importance /needs of house-physiological needs, affectional needs, socio-economic needs, psychological needs Site selection • Soil- Types of soil for housing • Location- Relationship with the road, the orientation, Effect of winds, the surrounding environment. Characteristics of the plot - size, proportion, shape, types of houses , Urban byelaws
Unit2	General principles of Housing- aspect, prospect, grouping, roominess, flexibility, lighting, ventilation and sanitation. Classification of house – Flats; studio apartment; condominium; villas; pent house Economy in construction
Unit3	Need of planning homes, Open & closed plans, Planning aspects of Living Room, Drawing & Dining Room, Bedrooms. Kitchen planning- its need, Type of kitchen plans, Work triangle, Standard measurement.
Unit4	Landscape- Importance, Planning – Hard & Soft landscape, Design Process. Dealing with external agencies- legal aspect & procedures involved in buying a land & construction of house.

Recommended readings:

- Design Fundamentals in Architecture: V.S Prammar
- Management in Family Living: Paulena Nickell and Jean Muir Dorsey
- Home Management: MA Varghese, N N Ogale and K Srinivasan, New Age International Publishers
- How to build a House: Saskia Lacey
- Dwelling House Construction: Albert G.H Dietz

B.Sc. (HA018) Introduction to Interior Designing (Practical)

- Development of designs.
- Colour wheel and planning colour schemes of different rooms.
- Traditional Alpana designs for decoration in rooms/ cards.
- Pottery painting and decoration.
- Paper cutting for decorating a house for special occasions.
- Use of waste materials for making utility/ decorative articles.
- Table setting, Napkin folding and flower arrangements.
- Visit to an interior decoration site/office to get an insight of current trends and practical experience in the field of interior decoration.
- Develop a house plan/ floor plan for low income group
- Develop a house plan/ floor plan for Middle income group
- Develop a house plan/ floor plan for High income group
- Visit an onsite project related to housing to get deep insight of practical implication.

Recommended readings:

- Dorothy Stepat De Van.(1980). Introduction to Interior Design, Macmillan, N.Y
- Peter Green. 1967. Introducing Surface Painting, Br.Bestford Lt., UK.
- Rowland Hilder. 1966. Starting with water, Colour, Studio Vista, U.K.
- Bhawanani Enakshi 1969. Decorative Designs and Craftsmanship of India, B. Taraporenia Sons and Co. Pvt Ltd., Bombay.

B.Sc. (HA019) Life Span Development II

Units	Course details
Unit 1	Adolescence: Physical changes, changes in social behaviours, development of emotional maturity; Heterosexual relationships. Family relationship and relationship with teachers. Outer influences on adolescent; drug abuse and AIDS.
Unit 2	Early and middle adulthood: The development of self in young and middle adulthood-physical changes, intellectual, cognitive functioning and personality development.
Unit 3	Later adulthood: Physical changes, cognitive functioning, personality patterns and changes.
Unit 4	Old age: Attitudes towards life and death among the elderly, status of aged in India and helping the aged. Care during old age and old age homes in India

Recommended readings:

- Child Development: Hurlock, B Elizabeth, Tata Mc Graw hill publishing company Ltd. New York
- Developmental psychology: A Lifespan approach Hurlock, B Elizabeth, Tata Mc Graw hill publishing company Ltd. New York
- Child Development: Laura E. Berk. Pearson

B.Sc. (HA020) Population Dynamics

Units	Course details
Unit 1	Demographic profile of child in India, Population in perspectives; theories of population education. Growth of world population, Population of India, India's population problem in perspectives, social- cultural aspects of population growth in India, Population policy in India.
Unit 2	Population education- Meaning of population education, Need and importance of population education, objective of population education.
Unit 3	National and International organization/ programmes like ICDS, FPAI, WHO, UNICEF, CARE, UNFPA, USAID, IPPF, UNESCO, WFP, IMF, IFAD and ILO.
Unit 4	Government development programmes for population, women and children in India. Marriage concept and meaning, readiness and preparation for marriage, selecting suitable partner, premarital association, premarital guidance and counselling. Family: Definition, Function, Function, composition and types. Family structure in India, Family life cycles.

Recommended readings:

- King, F., Martodipoero, S. and Maurice, K. (1979). Primary Child Care: A Guide for the Community Leader, Manager and Teacher. Book II. Oxford University Press, Oxford.
- Fargo, J. and Pickarts, Evelyn. (1971). Parent Education Towards Parental Competence. Appleton Century Croft, New York

- Dhama, O.P. and Bhatnagar, O.P. (1980). Extension and Communication for Development. Oxford and IBH
- State of World's Children. UNICEF Annual Publication
- Gordon Michael. 1972. The nuclear family in crisis. The search for an alternative. Harper and Row Publishers, New York.
- Kenkel, W.F. (1973). The Family in perspective. Meredith Corporation, New York.

B.Sc. (HA021) Fashion studies

Units	Course details
Unit 1	Importance of clothing: Clothing functions and theories of origin, Clothing terminology, Selection of clothes for different age, climate, personality, sex, and occasions. Selection and Evaluation of ready-made garments.
Unit 2	Fashion: Fashion terminology, Fashion cycle, Sources of fashion, Factors favouring and retarding fashion, Fashion Forecasting-Seasons, sources, steps in forecasting.
Unit 3	Adoption of fashion :Consumer groups- fashion leaders, followers Adoption process: Trickle-down theory, Trickle across theory, bottom up theory
Unit 4	Fashion centres and designers of the world Role of designer Fashion centres and leading designers designs, Accessories, Elements and principles of design, Structural and applied design

Recommended readings:

- Brown, Patty, Rice J., 1998, Ready to Wear Apparel Analysis. Prentice Hall.
- Marshall S G, Jackson H O, Stanley MS, Kefgen M & Specht T, 2009, Individuality in Clothing & Personal Appearance, edition, Pearson Education, USA Tate.
- S.L., Edwards M.S., 1982, The Complete Book of Fashion Design, Harper and Row Publications, New York.
- Corbman, P.B., (1985) Textiles- Fiber to Fabric, Gregg Corbman, P.B. ,

B.Sc. (HA022) Communication and Instructional Technology (Practical)

- Preparation and use of instructional media: Chart, Poster, Flash cards, Graphs, Flannel graphs, models, use of black board, use of bulletin board
- Preparation and use of slides.
- Use and handling of instruction aids overhead projector/slide projectors/ camcorder/tape recorder and public-address system.
- Demonstration as instructional technology.
- Organizing and participating in various types of group discussions.
- Lesson planning, presentation and evaluation

Recommended readings:

- Dhama Barker, L. (1990). "Communication", New Jersey: Prentice Hall, Inc.
- Dhama, O.P. and Bhatnagar O.P. Education and communication for development (1985) Oxford and IBH Publishing Co. Pvt, New Delhi.
- Devito, J. (1998) Human Communication. New York: Harper & Row.
- Patri and Patri (2002); Essentials of Communication. Greenspan Publications

Therapeutic Nutrition (Practical)

- Introduction to meal planning: rich sources of nutrients, Use of food exchange lists.
- Planning and preparation of nutritious diets for: pre-schooler, school age child
- Formulation of nutritious diets for: adolescent and young adult.
- Preparation of nutritious diets for: pregnant/lactating woman/elderly.
- Planning nutrient rich snacks/dishes: Infants (Complementary foods)/children/ adult
- Planning and preparation of diets using exchange lists.
- High fibre and low residue diet.
- Diet planning during Gastrointestinal disorders.
- Diet planning during liver disorders.
- Diet planning in diabetes.
- Diet planning in heart diseases/ fat controlled diet.
- Diet planning in Kidney diseases.
- Diet planning during food allergies, obesity and gout, cancer and burns
- Visit to a hospital which have dietetics department to get an insight of diet counseling of the patients.

Recommended readings:

- Nutrition and Dietetics: B. Srilakshmi, New age international.
- Life Cycle Nutrition: Sari Edelstein, Jones and Bartlette Publishers Inc
- Fundamentals of Food, Nutrition and Diet Therapy: Sumati R Mudambi and MV Rajagopal, New age international
- Textbook of Human Nutrition: Anjana Agarwal and Shobha A Udipi, Jaypee brothers Medical Publishers(P) Ltd.
- Textbook of Nutrition and Dietetics: Kumud Khanna, Sharda Gupta and *et.al.*

B.Sc. (HA024) Fundamentals of Housing and Interior Designing (Practical)

- Develop a house plan/ floor plan for low income group
- Develop a house plan/ floor plan for Middle income group
- Develop a house plan/ floor plan for High income group
- Visit an onsite project related to housing to get deep insight of practical implication.
- Development of designs.
- Colour wheel and planning colour schemes of different rooms.
- Traditional Alpana designs for decoration in rooms/ cards.
- Pottery painting and decoration.
- Paper cutting for decorating a house for special occasions.
- Use of waste materials for making utility/ decorative articles.
- Table setting, Napkin folding and flower arrangements.
- Visit to an interior decoration site/office to get an insight of current trends and practical experience in the field of interior decoration.

Recommended readings:

- Dorothy Stepat De Van.(1980). Introduction to Interior Design, Macmillan, N.Y
- Peter Green. 1967. Introducing Surface Painting, Br. Bestford Lt., UK.
- Rowland Hilder. 1966. Starting with water, Colour, Studio Vista, U.K.
- Bhawanani Enakshi 1969. Decorative Designs and Craftsmanship of India, B. Taraporenia Sons and Co. Pvt Ltd., Bombay
- Design Fundamentals in Architecture: V.S Prammar
- Management in Family Living: Paulena Nickell and Jean Muir Dorsey
- Home Management: MA Varghese, N N Ogale and K Srinivasan, New Age International Publishers.
- How to build a House: Saskia Lacey.
- Dwelling House Construction: Albert G.H Dietz

THIRD YEAR

B.Sc. (HA025) Clothing Construction and Flat pattern making

Units	Course details
Unit 1	Sewing equipment and other tools required for measuring, drafting, cutting and stitching. Sewing machine and its parts, their uses and care. Importance and functions of clothes. Clothing requirements of infants, toddlers, preschool and elementary school children, adults and old age person.
Unit 2	Clothing construction terminology. Construction processes: Hand stitches, seam and seam finishes, disposal of fullness, plackets and edge finishing, suitability for different fabrics and clothing articles.
Unit 3	Preparation of fabric for layout and cutting; stay stitching. Unit construction methods and fitting. Surface layering • Applique- simple, cut, felt Quilting- hand and machine • Pleats • Tucks. Anthropometric measurements: Importance and techniques. Garment designing: Techniques and importance
Unit 4	Flat patter making: Basic paper pattern, types of basic pattern, process of designing by flat pattern method. Standard of good fit and fitting problems. Grading and adaption of basic block.

Recommended readings:

- Armstrong, H.J., 2009, Pattern Making for Fashion Design, Harper Collins Publishers Inc., New York.
- Stamper, A.A., S. H. Sharp and L.B. Donnell, 1986, Evaluating Apparel Quality, Fairchild Publications, America.
- Liechty, E.G., Potterberg, D.N., Rasband, J.A., 2010, Fitting and Pattern Alteration : A Multimethod Approach, Fairchild Publications, New York.

B.Sc. (HA026) Traditional Indian Textiles

Units	Course details
Unit 1	Traditional woven textiles of India: Decca muslin and jamdani sarees, Baluchar sarees, Pochampalli sarees, Patola and Ikat sarees, Kanchipuram sarees, Chanderi Sarees, Maheswari sarees, Vichitrapuri sarees and Brocades Woven shawls of Kashmir, Himanchal Pradesh and North- eastern states.
Unit 2	Printed and painted textiles: Block printed textiles, Tie and Dyed textiles, Kalamkari and Madhubani
Unit 3	Embroideries of different states of India: Kashida of Kashmir, Chamba rumal, Phulkari and Bagh of Punjab Embroideries of Gujrat, Chikankari and zari work of Uttarpradesh Kanthas of Bengal, Manipuri embroidery, Kasuti of Kartakaka, embroidery and patchwork of Bihar
Unit 4	Traditional costumes of India: Kashmir, Punjab, Uttar Pradesh, West Bengal, North-eastern states, Rajasthan, Gujrat, Maharashtra, Uttarakhand Status of Traditional Textiles in Modern India: Evolution and socio-economic significance of Khadi, Handloom and Handicraft sector Sustenance of traditional textile crafts. Conservation of Textiles: Factors affecting deterioration of textiles, Care and storage of textiles

Recommended readings:

- Flynn, D. 1971. Costumes of India. New Delhi, Oxford and IBH Publishing Company.
- Fabin, C. 1977. Indian Dress. New Delhi, Orient Longman Ltd.
- Pandit, S. 1976. Indian Embroidery: Its Variegated Charms. Baroda.
- Chattopadhyaya, K. 1985. The Glory of Indian Handicraft. New Delhi Calrion Books.

B.Sc. (HA027) Food standard and Quality control

Units	Course details
Unit 1	Meaning of quality, quality factors in food: Appearance, textural factors, flavour factors and other factors. Quality standards, assurance and factors affecting quality.
Unit 2	Methods and techniques for assessment of food quality: Sensory evaluation and Objective evaluation. Quality control: Basic fundamentals for quality control.
Unit 3	Food standards, food laws and regulation: Prevention of Food adulteration act, Essential Commodity act, Fruit Product Order, Meat Product Order, Milk and Milk Product Order, Misbranding, Bureau of Indian Standards, Ag Mark standard, Export quality control, Inspection Act, ISO.
Unit 4	Introduction to legal categories of food substances, food labelling, nutrition labelling, International food standards and Codex Alimentarius. Food additives: Needs for food additives, additives. Food safety: safety hazards and risk, food related hazards, HACCP as a method to prevent food borne illness.

Recommended readings:

- Potter, N.N and Hotchkiss, J.M. 1996. Food Science V ed. CBS Publishers and Distributors, Delhi.
- Srilakshmi, B. 2001. Food Science II ed. New Age International (P) Limited Publishers.
- Kalia, M. 2002. Food Analysis and Quality Control. Kalyani Publishers.
- Many, Shakuntala N. and Shadaksharaswamy, M. 2001. Food facts and Principles II ed. New Age International (P) Limited Publishers.
- Kalia, M. and Sood, S. 1996. Food Preservation and Processing. Kalyani Publishers.

B.Sc. (HA028) Nutrition Education

Units	Course details
Unit 1	Objectives, principles and importance of nutrition education in a community
Unit 2	Identification of nutritional problems and target groups. Nutritional surveys, National Nutrition Monitoring Bureau, Deficiency diseases and public health problems- Vitamin A, Iron, Iodine deficiencies, Fluoride deficiencies
Unit 3	Communication techniques: Process, its components. Communication techniques: Mass group and individual; advantages and disadvantages. Theory and practice of audio- visual teaching. Learning by doing, Learning by observation, symbolic experience. Classification and use of audiovisual aids: Electronic aids, non-projected and three dimensional. Selection and evaluation of audio visual aids.
Unit 4	Nutrition education: Planning effective programmes for target groups. Developing appropriate messages. Assessment of nutritional status: Meaning, need, objectives and importance Direct: clinical signs, nutritional anthropometry, biochemical test Indirect: Diet surveys Food and Nutritional Security: concept, issues and schemes

Recommended readings:

- Rathore, O.S.; Chauhan, M.S; Dhakar, S.D. and Ojha, S.N 2001. Handbook of Extension education. Agrotech Publishing Academy, Udaipur.
- Ray, G.L. 1991. Extension Communication and Management. Naya Prokash, Kolkata.
- Obert, J.C. 1986. Community Nutrition. Macmillan Publishing Co., ny
- Reddy, A.A. 2001. Extension education. Sree Lakshmi Press, Bapatla.

B.Sc. (HA029) Early Childhood Education and Management

Units	Course details
Unit 1	Significance and objectives of early childhood education: present status of young children in India, significance of early childhood years
Unit 2	Current status and expansion and scope of ECE to ECCE. Admission tests and effect on children, effect of pressures from formal schooling, need for EECE programmes, extra familial care in the Indian context
Unit 3	Historical overview of ECCE: Global views of Rousseau, Pestalozzi, Froebel and Montessori ECE in India: Overview of pre and post-independence period, contributions of Tagore, Gandhi, Gijubhai, Tarabai
Unit 4	Concept of management of ECCE. Material management: place/space, equipment, furniture etc. Programme management: planning long and short term program, considerations in planning, preparation required. Personnel management: organization and administration, selection, recruitment, supervision and monitoring Financial management: Allocation of budget, income- expenditure balance and resource generation, Documentation: admission policy and record keeping

Recommended readings:

- Aggarwal, J. C. (2007). Early Childhood Care and Education: Principles and Practices. Shipra: New Delhi.
- Arni, K. and Wolf G. (1999). Child Art with Everyday Materials. TARA Publishing.
- Mohanty, J. Mohanty, B. (1996). Early childhood care and Education. Deep And Deep Publication, New Delhi.
- Morrison, G. S. (2003). Fundamentals of early childhood education. Merrill/Prentice Hall: Virginia
- Singh, A. (1995). Playing to Learn: A training manual for Early Childhood Education. M. S. Swaminathan Research Foundation.
- Swaminathan, M. (1998). The First five Years. Sage Publications.

B.Sc. (HA030) Children with Special needs

Units	Course details
Unit 1	Introduction to Childhood Disability: Defining disabilities, models of disability, classifying disabilities, Social construction of disability, demography.
Unit 2	Common Childhood Disabilities: Identification, assessment and etiology with reference to locomotor disability, visual disability.
Unit 3	Identification, assessment and etiology with reference to auditory and speech disability, intellectual disability, autism, learning disability
Unit 4	Children with Disabilities and Society: Families of children with disability, prevention and management of different disabilities, educational practices- Special education and inclusion, policy and laws.

Reccomended readings:

- Chopra,G., (2012). Early Detection of Disabilities and persons with disabilities in the community. New Delhi: Engage publications
- Chopra,G., (2012). Stimulating Development of Young Children with Disabilities at Anganwadi and at Home: A Practical Guide. New Delhi: Engage publications.
- Sharma, N. (Ed)(2010). The Social Ecology of Disability-Technical Series -3Lady Irwin College. Delhi:Academic Excellence
- Mangal, S. K. (2007).Exceptional children: An introduction to special education. New Delhi: Prentice Hall of India
- Jangira, N.K.(1997) "Special Educational Needs of Children and Young Adults: An Unfinished Agenda," Education and Children with Special Needs: From Segregation toInclusion,Ed. Seamus Hegarty, Mithu Alur, Thousand Oaks: Sage Publications Inc.
- Karna, G. N. (1999). United Nations and rights of disabled persons: A study in Indian perspective. New Delhi: A.P.H. Publishing Corporation.

B.Sc. (HA031)Financial Management

Units	Course details
Unit 1	Importance of personal and family finance, Income concepts : production income, money income, hidden income, flow of goods and services, limits and factors affecting fluctuations in real income, depreciation in money value, inflation, deflation, consumer price index.
Unit 2	Financial Planning i) Steps of successful financial planning; Analyzing income, income profiles, methods of handling money; Family life stages and use of money. ii) Financial spending plan; Record keeping, Account keeping: importance and ways of keeping accounts
Unit 3	Budget; types, steps, advantages and disadvantages Credit, types, sources(rural-urban), use of credit and credit instruments to increase level of living of urban/ rural households
Unit 4	Saving and investment; objectives, types of saving/ investment, saving institutions. Taxation: objectives, characteristics, classification, advantages and disadvantages of each.

Recommended readings:

- Khanna S.R., Hanspal S., Kapoor S. &Awasthi H.K., 2007, Consumer Affairs, Universities Press India Pvt. Ltd.
- Sawhney, H.K. & Mital, M.,2007, Family Finance & Consumer Studies, Elite Publishing House Pvt. Ltd.
- Seetharaman, P. and Sethi, M.,2001, 'Consumerism: Strength and Tactics, New Delhi: CBS Publishers.

B.Sc. (HA032)Entrepreneurship Development

Units	Course details
Unit 1	Entrepreneurship- concept, definition, need and significance of entrepreneurship development in India, entrepreneurship growth process, barriers, entrepreneurship education model. Entrepreneur-their characteristics, types, gender issues, role demands and challenges. entrepreneurial Motivation,challenges faced by women entrepreneurs
Unit 2	Enterprise Planning and Launching : Types of enterprises classification based on capital, product, location, ownership pattern and process, sensing business opportunities and assessing market potential; market research,appraising of project and feasibility
Unit 3	Managing Production- organizing production; input-output cycle, ensuring quality. Managing marketing, understanding markets and marketing, functions of marketing, 4Ps of Marketing(same as marketing mix)
Unit 4	Financial Management: Meaning of finance, types and sources of finance estimation of project cost, profit Assessment

Recommended readings:

- Gundry Lisa K. & Kickul Jill R.,2007, Entrepreneurship Strategy: Changing Patterns in New Venture Creation, Growth, and Reinvention, SAGE Publications, Inc.
- Taneja & Gupta, 2001, Entrepreneur Development- New Venture Creation, Galgotia Publishing Company.

B.Sc. (HA033)NGO Management and CSR

Units	Course details
Unit 1	Meaning of NGO and GO. Difference between Government Organizations and NGO , characteristics of good NGO, Structure of NGO and functions of NGO
Unit 2	Historical Perspective of NGO, advantages of NGO, present status of NGO. Contribution of NGO in the Development. Role of Development Communicator in developing NGO.
Unit 3	Starting a NGO,; steps for starting NGO, registration of NGO, selection of personnel , training of personnel, proposal writing under NGO, identifying funding agencies, resource mobilization, planning, implementation and evaluation strategy under NGO, documentation, PR in NGO
Unit 4	NGO Management: Organizational types and structures, managing people and teams in NGOs, NGO management competencies, applying NGO principles and values, accountability and impact assessment for NGOs. Problems of NGO: Training, recruitment, funding, resource mobilization, documentation

Recommended readings:

- S. Chandra, Guidelines for NGO Management in India (2003), Published by Kanishka Distributors, New Delhi.
- D. Lewis, Management of Non-Governmental Development Organization (2001), Second Edition, Published by Routledge, Newyork.
- Abraham, Formation and Management of NGOs (2003), Third Edition, Published by Universal Law Publishing Co. Pvt Ltd., New Delhi.
- Sundar, P. 2013, Business and Community: The Story of Corporate Social Responsibility in India , New Delhi, Sage Publication.
- Aggarwal, S.2008, Corporate Social Responsibility in India, Sage publication Pvt. Ltd.

B.Sc. (HA034) Clothing Construction and Flat pattern making (Practical)

- Demonstration on sewing equipment and tool, sewing machine and its care.
- Preparation of samples of basic hand stitches, machine stitches, edge finishing, fullness, finishing of necklines, placket opening, fasteners, mending and patches.
- Taking body measurement
- Demonstration on the preparation and layout of the different fabrics of plain, print, plaid, check and lines.
- Drafting and cutting and stitching of different (any four) garments or articles like bib/ jhabla/frock/ suit/ pyjama/ blouse/ petticoat/ laundry bag/ apron/ sling bag/ shopping bag.
- Surface layering
- Applique- simple, cut, felt /Quilting- hand and machine/
- Preparation of an article using Pleats, Tucks
- Designing and styling using flat pattern techniques Moving, dividing and combining darts: Pivot and slash method/ Converting darts into seam lines/ Adding fullness in blouse by gather and darts.

Recommended readings:

- Armstrong, H.J., 2009, Pattern Making for Fashion Design, Harper Collins Publishers Inc., Ney York.
- Stamper, A.A., S. H. Sharp and L.B. Donnell, 1986, Evaluating Apparel Quality, Fairchild Publications, America.
- Liechty, E.G., Potterberg, D.N., Rasband, J.A., 2010, Fitting and Pattern Alteration : A Multimethod Approach, Fairchild Publications, New York.

B.Sc. (HA035) Food Quality and Nutrition Education (Practical)

- Sensory quality evaluation of foods: Selection and training of panel of judges. Difference tests: Paired comparison test.
- Hedonic Rating test, Numerical scoring and composite scoring test.
- Detection of common adulterants in foods: Milk and milk products, water, starch, urea strip test. Ghee and butter- Vanaspati, starch, animal fat, Sweet meat, ice-cream, sherbets- matinal yellow. Pulses- presence of khesari dals, artificial colour in turmeric and chilli powder in coffee- presence of tamarind and date seed powder in coffee, test for exhausted tea leaves.
- Market survey of various foods for: Nutritional labelling and standards, Inspection of processed foods for safety. Selection and use of instructional material • Chart, posters, calenders, flip charts, pamphlets
- Preparation of nutrition education material.
- Practising use of nutrition education material on vulnerable groups in the community, urban and rural.
- Assessment of nutritional status : Anthropometric methods: Techniques employed height, weight, body mass index, skin fold measurements, Mid arm upper circumference. Dietary methods: Construction of 24 hour recall questionnaire, food frequency questionnaire and clinical signs and symptoms related questionnaire.
- Survey at least 10 families to assess their nutritional status.

Recommended readings:

- Potter, N.N and Hotchkiss, J.M. 1996. Food Science V ed. CBS Publishers and Distributors, Delhi.
- Srilakshmi, B. 2001. Food Science II ed. New Age Internationals (P) Limited Publishers.
- Kalia, M. 2002. Food Analysis and Quality Control. Kalyani Publishers.
- Many, Shakuntala N. and Shadaksharaswamy, M. 2001. Food facts and Principles Iled. New Age Internationals (P) Limited Publishers.
- Kalia, M. and Sood, S. 1996. Food Preservation and Processing. Kalyani Publishers.
- Rathore, O.S.; Chauhan, M.S; Dhakar, S.D. and Ojha, S.N 2001. Handbook of Extension education. Agrotech Publishing Academy, Udaipur.
- Ray, G.L. 1991. Extension Communication and Management. Naya Prokash, Kolkata.
- Obert, J.C. 1986. Community Nutrition. Macmillan Publishing Co., ny
- Reddy, A.A. 2001. Extension education. Sree Lakshmi Press, Bapatla.

B.Sc. (HA036) Early Childhood Management and Special Education (Practical)

- Visit to Nursery school/ ECCE centers for observation and evaluation from the view of material, space, personnel, finance and documentation.
- Evaluation of daily, weekly, monthly schedule of activities prepared.
- Preparation of master lesson plan.
- Preparation of teaching aids.
- Conducting activities for children in lab nursery class room/ aganwadis/ balwadis.
- Preparation and conduction of parent teacher meeting or conduct a Workshops in any two of the following
 - a) Understanding childhood nutrition and health
 - b) Developing work sheets to teach concept
 - c) Enhancing social and language skills
- d) Music, movement and drama for children
- Visits to organisations working with children with disabilities.
- Observing children with disabilities in families and institutions.
- Planning developmentally appropriate material for children with disabilities.
- Exploring audio-visual sources with reference to children with disabilities and their families.
- Prepare a case study of a special child.

Recommended readings:

- Aggarwal, J. C. (2007). Early Childhood Care and Education: Principles and Practices. Shipra: New Delhi.
- Arni, K. and Wolf G. (1999). Child Art with Everyday Materials. TARA Publishing.
- Mohanty, J. Mohanty, B. (1996). Early childhood care and Education. Deep And Deep Publication, New Delhi.
- Morrison, G. S. (2003). Fundamentals of early childhood education. Merrill/Prentice Hall: Virginia
- Singh, A. (1995). Playing to Learn: A training manual for Early Childhood Education. M. S. Swaminathan Research Foundation.
- Swaminathan, M. (1998). The First five Years. Sage Publications.