

## SECTION IX

### FACULTY OF HOME SCIENCE

#### General information

##### Disciplines

- Apparel and Textile Science
- Fashion Designing
- Food and Nutrition
- Nutrition and Dietetics
- Family Resource Management
- Interior Design
- Human Development
- Home Science Extension and Communication Management

## COLLEGE OF HOME SCIENCE

Home Science is an inter-disciplinary field of knowledge which integrates concepts from Physical, Biological, Agricultural, Social and Environmental Sciences along with its own components of Food and Nutrition, Family Resource Management, Human Development, Apparel and Textile Science and Home Science Extension and Communication Management. It prepares the individuals to obtain recent scientific information for dealing with real life situations to cope up with every day problems effectively by providing broad-based, culturally relevant knowledge in different areas of Home Science.

The need of Home Science Colleges as a part of State Agricultural Universities emerged with an increase in awareness of contribution of rural and urban women to family economy and in raising the standard of living. Punjab Agricultural University started the College of Home Science in July, 1966 with the help of two USAID experts in Home Science - Dr Edna R Kaufman and Dr Maria S Friesen. Through its integrated programme of teaching, research and extension, the College grew rapidly, playing a significant role in improving the socio-economic conditions of rural as well as urban families, thereby, giving them opportunity to have a better quality of life.

Mrs Sushila Dantiyagi, a renowned Home Scientist, was the founder Dean of the College who was at the helm of affairs till August, 1973. The other successive regular Deans of the College were: Drs S Bajaj, P L Srivastava, M B Singh, K K Sharma, S K Mann, M K Dhillon and Neelam Grewal. Dr Jasvinder Kaur Sangha took over as Dean of the College on 15<sup>th</sup> November, 2013.

The mainstay of College of Home Science is B.Sc. (Honours) Home Science 4-year programme after 10 + 2. The College has started three new degree programmes - B.Sc. (Hons) Fashion Designing of 4-year duration, B.Sc. (Hons) Nutrition and Dietetics of 4-year duration and B.Sc. (Hons) Interior Design also of 4-year duration from the academic sessions 2008-09, 2009-10 and 2014-15 respectively. The College has also started M.Sc. Fashion Designing from the academic session 2011-12.

The College of Home Science is a pioneer institution among the Home Science Colleges of State Agricultural Universities that started offering Masters' programmes in all the disciplines of Home Science in the seventies. The Doctoral programmes in Food and Nutrition and Family Resource Management were introduced in the years 1974 and 1978, respectively. As the discipline grew, the Ph.D. programmes were initiated in other departments as well - Home Science Extension and Communication Management in 1986-87, Human Development in 1997-98 and Apparel and Textile Science in the year 1998-99.

Since the inception of the College, periodic, need based revision of course curriculum has been undertaken to cater to the emerging scenario in the discipline. The IV<sup>th</sup> Deans' committee of the ICAR has recommended change in the syllabi of various UG programmes being run by SAUs with a view to orient these towards emerging needs of respective disciplines and the educational scenario. The course curriculum of B.Sc (Hons) H.Sc. 4-year degree programme has been restructured in the light of these recommendations, without deviating from the main mission of the programme. Under the restructured curriculum, the students are required to take specialization/professional courses in one of the specific disciplines of Home Science in the last two years. These courses are vocational in nature and provide practical training in self-employment/entrepreneurship. In the last semester, Experiential Learning and In plant Training of the students has been planned to hone their entrepreneurial skills and enable them to start their own enterprises. The students will also undertake Rural Awareness Work Experience in this semester.

The curricula of Masters' and Ph.D. programmes in all the disciplines of Home Science was also restructured in 2010-11 in accordance with ICAR guidelines. The present curricula aims at increasing both the academic as well as vocational capabilities of the students for better employability. Therefore, a choice of elective courses for intra discipline specialisations is being offered.

The College has the privilege of having one of the best-equipped laboratories amongst the Home Science Colleges of the country. There are good number of class rooms, seminar rooms and laboratories in the College. To facilitate the teaching of highly vocational professional electives, several additions have been made to the existing laboratories. These include Baking, Institutional Management, Multimedia, Computer and ARIS laboratories. The College also has four Experiential Learning Units, one each on Apparel Manufacturing, Bakery and Confectionery, Artistic Creations and Child Care Providers Training. Latest equipment have also been added to the laboratories of the departments to impart quality education both at UG and PG level.

## APPAREL AND TEXTILE SCIENCE

### PROGRAMMES

1. **B.Sc.(Hons) - Fashion Designing**
2. **M. Sc. Fashion Designing**
3. **M.Sc.**
4. **Ph.D**

### COURSE REQUIREMENT

#### **M. Sc. Fashion Designing**

Field of specialization	Fashion Designing
Required courses	FD 501, FD 502, FD 503, FD 504, FD 505, FD 506
Supporting courses	Stat 421, PGS 501 and other courses from subject matter fields (other than minor) relating to area of special interest and research problem.
Minor fields	Apparel and Textile Science, Business Management, Extension Education, Family Resource Management, Sociology or any other as approved by the Dean Postgraduate Studies.
Deficiency Courses	9-12 credit hours of atleast 400 series courses as recommended by the Student's Advisory Committee and approved by the Dean, Postgraduate Studies

#### **M.Sc.**

Fields of specialization	Clothing, Textiles
Required courses	ATS 501, ATS 502, ATS 503, ATS 504, ATS 505, ATS 506
Supporting courses	Stat 421, PGS 501 and other courses from subject matter fields (other than Minor) relating to area of special interest and research problem.
Minor field	Business Management, Home Science Extension and Communication Management, Extension Education, Family Resource Management, Sociology, Chemistry or any other as approved by the Dean, Postgraduate Studies.
Deficiency courses for students with elective other than Clothing and Textiles	9-12 credit hours of atleast 400 series courses as recommended by the Student's Advisory Committee and approved by the Dean, Postgraduate Studies

#### **Ph.D.**

Fields of specialization	Clothing, Textiles
Required courses	ATS 601, ATS 602, ATS 603, ATS 604
Supporting courses	Courses from subject matter fields (other than Minor) relating to area of special interest and research problem.
Minor field	Business Management, Home Science Extension and Communication Management, Extension Education, Family Resource Management, Sociology, Chemistry or any other as approved by the Dean, Postgraduate Studies.
Deficiency courses for students with M.Sc. (Home Science) in a discipline other than Apparel and Textile Science	ATS 501, ATS 502, ATS 503, ATS 504, ATS 505, ATS 506 and other courses as recommended by Student's Advisory Committee and approved by the Dean, Postgraduate Studies

## DESCRIPTION OF COURSE CONTENTS

### Undergraduate Courses

<b>ATS 91 General Home Science</b>	<b>2+2</b>	<b>Sem I</b>
<p>Introduction and scope of Apparel and Textile Science. Different sub-disciplines in Apparel and Textile Science. Basic terminology used in Clothing and Textiles. Basic knowledge about garment features. Meaning and stages of life span development. Developmental tasks and critical periods. Hereditary and environment. Growth and development. Maturation and learning. Meaning of different forms of developments-physical, cognitive, social, emotional, language and moral. Role of stimulation and intervention in brain development. Terms used in Food and Nutrition. Food and its functions. Food groups and nutrients. Various methods of cooking and effect of heat on nutritive value of food.</p> <p>Practical: Basic embroidery stitches and fabric painting. Introduction to various foods. Measures of weight and volume. Basic cooking - preparation of beverages, snacks and desserts.</p>		
<b>ATS 101 Fundamentals of Clothing Construction</b>	<b>1+2</b>	<b>Sem I</b>
<p>Importance and functions of clothes. Clothing construction terminology. Equipment and accessories used in clothing construction, their care and use. Common defects and general repair of sewing machine. Methods of garment construction. Selection of fabric for apparel. Preparation of fabric for layout and cutting. Clothing requirements of various age groups. Functional and self-help garments for pre-schoolers and senior citizens.</p> <p>Practical : Use of sewing equipment. Working, care and repair of sewing machine. Preparation of samples of basic hand stitches, seams, seam finishes, disposal of fullness, finishing of necklines, placket openings, fasteners and mending. Preparation and layout of different fabrics. Taking body measurements. Drafting, cutting and stitching of infant's top, petticoat and skirt.</p>		
<b>ATS 102 Textile Science and Care</b>	<b>2+1</b>	<b>Sem II</b>
<p>Introduction to textiles. Basic textile terminology. Textile fibres and their classification. Production, manufacturing, processing, properties and use of cotton, linen, silk, rayon, viscose rayon, nylon, polyester and acrylic fibres. Spinning of staple fibres and filaments. Yarn classification and uses. Fabric construction: weaving, knitting, braiding, lace making and non-wovens. Basic finishes applied to fabrics and their importance. Labels and tags used in textiles. Different types of washing machines and irons. Principles and methods of washing and finishing. Principles, classification and techniques of stain removal. Role of water, soaps and detergents as cleaning agents. Bleaching, blueing, stiffening agents and additives used in laundry. Principles of dry cleaning, use of absorbents and solvents. Disinfection and storage of clothes.</p> <p>Practical : Identification of textile fibres using non technical methods, microscopic, burning and chemical tests. Study of yarns, their types and sizes, thread count, bow and skewness. Study of common fabrics available in the market. Removal of common stains from cotton fabrics. Washing and finishing of cottons, silks, woollens, synthetics and special articles. Visit to a textile mill.</p>		
<b>ATS 201 Fundamentals of Weaving and Knitting</b>	<b>2+1</b>	<b>Sem I</b>
<p>Basic weaving and knitting terminology. Introduction to woven and knitted structures. Conventional looms and their parts. Weaving accessories. Principles of weaving. Construction and properties of plain, twill, satin, dobby, jacquard, lappet, swivel and pile weave. Yarn packaging and numbering. Selection and preparation of yarn for weaving. Principles and classification of knitting. Stitches used in knitting. Types of knitted fabrics - their characteristics and uses.</p> <p>Practical : Parts of a loom and its working. Yarn preparation, drafting, lifting plans, weaving the samples of plain weave and its variations. Study of knitting yarns and accessories. Use of knitting abbreviations.</p>		

Preparation of basic samples of hand knitting. Casting on, casting off, increasing, decreasing, necklines and pockets.

**ATS 202 Apparel Designing and Construction** **1+2** **Sem II**

Importance and techniques of anthropometric measurements. Application of design elements and principles to clothing and apparel designing. Factors affecting clothing selection. Biological, socio-psychological and socio-economical aspects affecting clothing decisions of family. Wardrobe planning for various age groups. Planning clothing budget for the family.

Practical : Survey of different types of lining, interlining, interfacing and dress materials available in the market. Taking body measurements of children and adults. Drafting of child's and adult's bodice block, its adaptation to various garments and estimation of fabric. Designing, drafting and construction of frock, blouse, lady's shirt, churidar pyjama/salwar, night suit/nighty. Sketching of different designs for various garments.

**ATS 301 Introduction to Dyeing and Printing** **1+2** **Sem I**

Terminology used in dyeing and printing. Classification, properties and selection of different classes of dyes. Natural dyes - their advantages and disadvantages. Methods of dyeing fibres, yarns and fabrics. Types of dyeing. Styles of printing. Methods of printing - block, screen, stencil and roller. Resist dyeing and printing. Common dyeing and printing defects, their causes and preventive measures.

Practical : Preparation of cotton yarns and fabrics for dyeing. Dyeing of cotton fabric with different classes of dyes. Preparation of block and screen/stencil printed samples. Preparation of samples with at least ten different techniques of tie and dye. Preparation of a sample in two/ three colours with batik printing technique. Visit to dyeing and printing units.

**ATS 302 Traditional Textiles of India** **2+1** **Sem II**

Study of traditional woven, printed and painted textiles of India. History, characteristics and status of traditional sarees and shawls of India. Historical background, characteristics and status of traditional embroideries of India - kasheeda of Kashmir, phulkari and chope of Punjab, chikankari of Uttar Pradesh. Kutch and Kathiawar embroideries of Gujarat, Chamba rumal of Himachal Pradesh, kantha of West Bengal, Manipuri embroidery, embroidery of Haryana, and gold and silver embroidery. Carpets of Kashmir, Uttar Pradesh, Warangal and Amritsar. Durries of Punjab, Bihar, Bengal and Kerala. Factors affecting diversity of textiles in India and their importance in the present scenario.

Practical : Documentation of Indian textiles and embroideries. Preparation of samples of selected traditional Indian embroideries. Preparation of an article using one of the traditional embroideries.

**ATS 303 Fundamentals of Fashion Illustrations** **1+2** **Sem II**

Terminology used in fashion industry and for fashion illustrations. Selection of materials for fashion illustration. Principles of sketching fashion figures. Steps in creating movement in figures and achieving proportions. Principles and rules in sketching and proportioning body parts. Different types of silhouettes. Importance and types of rendering techniques. Role of fashion illustrator and career opportunities.

Practical : Basic proportions of human anatomy and fashion figures. Developing figures using figure guides. Drawing hands, legs, feet, faces, hair styles and accessories. Study of garment silhouettes and folds. Basic sketching of fashion details: collars, sleeves, skirts, pleats, etc. Design development of garments for women, men and children's wear. Use of different colour media for rendering illustrations. Techniques of creating textures and patterns.

**ATS 304 Computer Aided Fashion Designing - I** **0+3** **Sem II**

Introduction to the tools of fundamental designing software. Detailed use of pick, shape, free-hand and smart drawing tools. Colouring the draped garments using interactive tools. Detailed use of fill colour, pattern fill and texture fill dialog. Creating shades in dress with the use of interactive fill and mesh tools. Use of outline colour dialog to draw fashion figures. Designing and draping garments on croquis. Creating effects in various silhouettes, preparing the draft for an adult bodice block. Designing of various necklines, collars, sleeves, pockets and accessories. Developing a portfolio.

- ATS 305 Draping and Pattern Making** **0+3** **Sem II**  
 Introduction to draping. Terminology of draping and pattern making. Principles of draping. Equipment used in draping. Basic silhouettes. Preparation of muslin for draping. Marking of dress form. Draping basic front and back bodices and skirt block. Draping of various types of yoke, collars, necklines and sleeves. Principles of pattern making - dart location and manipulation, added fullness and contouring. Different methods of pattern making. Preparation of foundation pattern and adaptation to various designs. Design development and style reading. Drafting patterns of upper and lower garments for different age groups. Developing commercial patterns. Pattern grading. Fitting problems and pattern corrections.
- ATS 306 Structural Fabric Designing** **1+2** **Sem II**  
 Knitting and weaving industry of India. Study of various types of knitted and woven fabrics. Common defects in knitted and woven fabrics. Various structural fabric designing techniques used in fabric formation by knitting and weaving.  
 Practical : Preparation of machine knitted samples using combination of knit and purl stitches. Study of knitting defects and their remedies. Creation and repeat setting of patterns. Construction of one integral/seamless garment. Weaving samples of plain, basket, rib, twill and satin weaves on loom. Pattern making in plain and twill weave. Preparing a small rug on frame loom. Visit to weaving centres and mills.
- ATS 401 Apparel Manufacturing** **1+2** **Sem I**  
 Fundamentals of apparel production. Organizational set up of apparel industry. Role of various departments in apparel manufacturing. Types of machines, accessories and ancillaries used in apparel manufacturing. Importance of apparel standards and quality control. Introduction to standards, specifications and accepted quality levels for different apparel products. Different stages of quality control of garments. Importance of good fit. Factors affecting a good fit. Fitting problems and their remedies.  
 Practical : Developing paper pattern of bodice block. Designing and construction of garments for different age groups and special groups. Analyzing fit, fitting problems and correcting fitting problems for upper and lower garments. Construction of prototype garments and their style variations. Preparation of design work sheet and cost sheet of each garment. Visit to apparel manufacturing units.
- ATS 402 Traditional Costumes of India** **2+1** **Sem I**  
 History of traditional costumes of India. Importance of traditional costumes for textiles and apparel industry. Factors affecting diversity of costumes in India. Costumes of different states of India - Jammu and Kashmir, Himachal Pradesh, Punjab, Haryana, Rajasthan, Gujarat, Uttar Pradesh, Madhya Pradesh, West Bengal, Orissa, Assam, Manipur, Andhra Pradesh, Kerala and Maharashtra.  
 Practical : Documentation of traditional costumes of India. Sketching of four Indian historic costumes and accessories. Adaptation of traditional costume designs to five different garments of contemporary use. Designing and construction of two costumes. Visit to a museum and art gallery, and report writing.
- ATS 403 Computer Aided Fashion Designing - II** **0+2** **Sem I**  
 Introduction to the tools of advanced designing software. Scalar and vector images. Creating new images, scanning, saving copy, file saving. Collage work. Preparation of inspiration, mood and theme boards. Creating slides, slide design, slide lay out, use of animation schemes. Designing various garments using CAD software. Preparation of spec sheet. Pattern and marker making of designed garments for various age groups using CAD software.
- ATS 404 Textile Decoration Techniques** **0+2** **Sem I**  
 Surface decoration techniques used in textiles. Types of fabric embellishments. Survey of embellishments available in the market. Use of various embellishments for surface decoration. Materials used for fabric painting. Designing through fabric painting and application of 3D-effects. Types of appliqué work. Equipment, material and method used for appliqué work. Designing through patch work. Basic stitches used in crochet work, increasing and decreasing of stitches. Preparation of samples of stitch variations. Crochet edging, insertion and trimmings. Designing and preparation of one crochet article. Preparation of article by combining various techniques of surface decoration. Cost estimation of the prepared articles. Documentation of designs and portfolio development.

**ATS 405 Textile Designing** **0+3** **Sem I**

Analysis of structural and applied designs - variation in fibre, yarn and fabric construction; embroidery, dyeing, printing and finishing. Sources of inspiration for basic sketching and painting. Materials used for textile designing. Types of motifs including natural, stylized, abstract, geometrical, animal, wild, calligraphic, nursery, one way, two way and multi directional prints. Process of designing various motifs. Enlargement and reduction of motifs. Creating patterns and designs for various end uses. Combining motifs and planning repeats for all over patterns. Dimensions, theories and harmonies of colour. Meaning of colours and their importance in designing costumes. Developing colour ways. Portfolio development.

**ATS 406 Fashion Merchandising** **2+1** **Sem I**

Fashion retailing and fashion merchandising terminology. Brief history of fashion, and fashion cycles. Theories of fashion adoption. Various factors affecting fashion. Operational patterns within the industry. Types of retailing and merchandising. Types of retail outlets. Organizational structure of stores. Non-store retailing. Effect of fashion cycle on retailing. Fashion forecasting, sources and interpreting customers demand. Sales promotion techniques. Definition, concept and purpose of visual merchandising.

Practical : Market analysis of prevalent fashions through visit to various types of stores. Developing display techniques for visual merchandising of apparel and textiles. Planning and organizing window display at different locations and its assessment. Report writing and presentation.

**ATS 421 Internship - I Entrepreneurial Placement/ In Plant Training** **0+2** **Sem II**

Training of the students in hosiery or ready-made garment industrial unit to develop industry oriented skills and impart practical experience in actual work environment.

**ATS 422 Internship II - Project Report and Presentation** **0+4 NC** **Sem II**

Training of the students to identify the problem, develop tools to collect data, analyse and interpret the data. Report writing and presentation.

**ATS 423 Internship - III Experiential Learning in Apparel Manufacturing** **0+8** **Sem II**

Orientation to experiential learning. Project report on setting up of a 'Fashion and Lifestyle Products' enterprise. Running and managing a 'Fashion and Lifestyle Products' enterprise - market survey, need assessment, designing, construction & costing of prototype, getting orders, production, packaging and shipment. Developing a product catalogue. Redressal of problems in running 'Fashion and Lifestyle Products' enterprise.

### **Postgraduate courses**

**ATS 501 Fibre Chemistry** **2+1** **Sem I**

Chemistry of polymers - polymerisation, types, degree and characteristics. General structure of textile fibres, molecular bonding, length, orientation, and requirements of fibre forming substances. Structure-property relations of the fibres - repeating units, bonds, reactive groups and reactions of cotton, linen, jute, silk, wool, viscose rayon, polyester, nylon, acrylic, spandex and minor fibres. Action of heat, light, bleach and micro-organisms on different fibres. Types and characteristics of bi-component and bi-constituent fibres. Study of new fibres. Blending- types, principles and technology.

Practical: Fibre testing - cross sectional view of cotton, wool, silk, polyester and acrylic. Effect of heat, acid, alkali, bleaches, finishing agents and solvents on cellulosic, protein and synthetic fibres. Detection of damage caused to cellulose and protein fibres by acids and alkalies. Quantitative analysis of fibre blends.

**ATS 502 Textile and Apparel Quality Analysis** **2+1** **Sem II**

Importance of textile testing, standardization and quality control. Functions of BIS and other standards. Sampling techniques of fibre, yarn and fabric. Effect of moisture and humidity on properties of textiles. Standard conditions of testing. Testing of fibre length, linear density, maturity, yarn count, single and lea strength, twist, crimp, evenness, weight, thickness, breaking, tearing and bursting strength, abrasion resistance, pilling, crease recovery, stiffness, drapability, air permeability, thermal properties, flammability,

colour fastness and assessment of other safety aspects in textiles, water permeability, water repellency, wicking, dimensional stability, comfort and fabric handle measurement. Identification of fabric defects. Quality control in spreading, cutting and bundling products.

Practical: Testing of fibre for length, effective length, and linear density. Testing of yarn for count, twist, crimp, evenness and strength. Testing of fabric for weight, thickness, fabric count, balance, breaking, tearing and bursting strength, abrasion resistance, pilling, crease recovery, stiffness, drapability, air permeability, thermal properties, water permeability, wicking and dimensional stability. Processing and statistical analysis of the test data. Inspection of raw material. Classification and analysis of fabric defects. Analysis of seams and fasteners' quality. Study of specification sheets for various garments. Quality analysis of selected garments available in the market. Visit to textile analysis laboratory.

**ATS 503 Fashion Draping and Custom Clothing** **0+3** **Sem I**

Draping, trueing and stitching of dartless shirt, surplice front and bustier. Draping collars, cowls, sleeves and lowered exaggerated armhole sleeves. Draping and stitching of skirts, flounces, ruffles and peplums. Draping sundresses and sculptured dresses. Draping knit fabrics. Designing custom clothing. Analysing style lines of various garments including collars, cowls and sleeves. Analysis of fitting problems related to wrinkles/creases and pulls of fabric at various sections of the garments, remedial measures and presentation.

**ATS 504 Computer Aided Textiles and Apparel Designing** **0+2** **Sem I**

Creating stripes and checks using suitable software. Creating weave library and assigning weaves to develop designs for weaving. Introduction to commands from different tool groups - file menu, freehand tools, geometric tool, selection tool, selection utility tools, colour utility tools and general utility tools. Developing motifs and creating full design/ repeats using the CAD commands. Creating weaves and storing in jacquard weave library and assigning weaves to the design plan. Developing a computer-aided portfolio of different motifs. Introduction to specialized designing software, command bar, menu bar and options, drawing tools, colour rendering, fill, pattern and repeat, creation of special effects, layers and layer settings. Introduction to draping mode, outlining, creation of grid and editing the object. Draping scanned pictures. Texture mapping and creating effects. Development of library and printing draped figures.

**ATS 505 Consumer Behaviour in Clothing** **2+0** **Sem II**

Origin of clothing, use of clothing among primitive people. Theories of clothing. Clothing symbolism in relation to customs, traditions, cultural contacts, status, education, social agitation of women and technology and role of legislation. Understanding the consumer demand. Consumer resources: motivation, knowledge and attitudes. Individual differences in consumer behaviour. Psychological processes involved in selection of textiles and apparel products. Consumer decision processes and behaviour. Consumer analysis and marketing strategies. Market Segmentation. Diffusion of innovation. Counterfeit textiles and consumer protection measures. Global consumer markets.

**ATS 506 Textile and Apparel Industry Trade** **2+0** **Sem I**

History and development of textile industry in India. Present status of textile and apparel industry in India-cotton, wool, silk, rayon, jute, handloom, hosiery and apparel industry. Government policies on textile and clothing. Textile Research Associations, Apparel Export Promotion Council, Textile Crafts Council, Khadi and Village Industries Commission, Apparel Promotion and Export Association. Study of Apparel Parks, Globalization, TUFFS, ISO 9000 and ISO 14000 standards. SWOT analysis. Visit to Apparel Export Promotion Council.

**ATS 507 Historic Textiles and Costumes** **2+1** **Sem I**

Study of traditional dyed, printed, embroidered and non-woven textiles of Egypt, Greece, Rome, France, America, England, Japan and China - fibre content, fabrics, motifs, colours, dyes and designs used. History and evolution of traditional costumes and accessories of Egypt, Greece, Rome, France, America, England, Japan and China for women and men and their significance in socio-economic status.

Practical: Collection and documentation of traditional textile prints and surface designs of various countries. Surface designing of textiles with combination of motifs of different countries. Documentation of various



styles of men and women's costumes of different countries. Adaptation of historic costumes to current male and female costumes. Visit to a museum.

**ATS 508 Applied Techniques in Pattern Making** **0+2** **Sem II**

Applied techniques of pattern making by incorporating style lines and fullness. Procedures used in the development of slopers and patterns. Developing dartless slopers, princess line variations, blouses, halters and surplice; vests and their types; collars, sleeves and skirts. Pants - pants length variations, bell bottom pants, body fitting pants, and other types. Application of pattern making techniques to designing and construction of five garments.

**ATS 509 Woven and Knitted Structures** **1+2** **Sem I**

Present status of textile industry of India. Modern looms and scope of modern methods of weaving. Dobby and jacquard patterning devices. Detailed pre-weaving processes. Study of design, draft and peg plans for different weaves; weave calculations; advantages and disadvantages. Study of complex and fancy structures- crepe, leno, mock-leno, double cloth, honey comb, diaper, diamond, doobby, warp and weft figuring, terry and pile, huck-a-back. Production technology of knitted fabrics and garments. CAM and automation in knit wear. Finishing requirements of knitted fabrics. Quality control in production of knitted fabrics.

Practical : Analysis of woven samples. Preparation of draft plans and peg plans of different weaves. Weaving samples of various weaves. Developing designs for weaving- motif preparation and placement, colour and texture plans. Documentation of traditional and modified textile designs and development of textile design library. Making samples of different designs using multi-coloured and complex knitting techniques. Visit to a knitwear garment unit.

**ATS 510 Dyeing and Printing** **1+1** **Sem II**

Concept of colour and its relation to light. Classification and types of dyes/colouring matter. Chemistry of dyes and pigments - composition, structure, properties, affinity towards fibres, method of application, fixing and after treatments. Eco-friendly natural dyes. Role of mordants. Advanced dyeing and printing techniques. Application and uses of selected enzymatic treatments.

Practical : Preparation of shade cards with selected classes of dyes and colour matching. Natural dyes - dyeing with different mordants. Advanced and non-conventional techniques of fabric printing. Theme based project work.

**ATS 511 Textile Auxiliaries** **1+1** **Sem II**

Definition, history, classification and selection of auxiliaries. Characteristics and properties of selected textile auxiliaries. Use of auxiliaries in processing operations. Chemistry and synthesis of surface active agents - essential requirements of surfactants and their classification. Biodegradability of surfactants. Methods of evaluation of textile auxiliaries. Eco-friendly auxiliaries.

Practical : Analysis of the surfactant properties in selected surfactants. Preparation of various sizing combinations. Analysis of the sized samples and selection of suitable combinations. Assessment of whiteness of fabrics finished with various bleaches and optical brightening agents. Assessment of finished fabrics with selected finishing auxiliaries.

**ATS 601 Clothing Physiology** **2+0** **Sem I**

Clothing as a portable environment. Comfort in clothing - principles of heat transfer in apparels, thermal insulation, breathable textiles. Designing comfortable apparel suitable for warm and cold weather. Requirements, importance, designing and fastening systems in sports clothing. Materials and design features for military clothing. Clothing design to accommodate physical disabilities and irregularities. Designing requirements for expecting and lactating mothers. Protective clothing for farm, industrial and fire fighters. Impact of protective clothing.

**ATS 602 Technical Textiles** **2+0** **Sem I**

Importance and classification of technical textiles. Types and uses of medical textiles. Special textiles for industrial textiles, automotive textiles, agro-textiles, geo-textiles, build-tech and pack-tech. Smart textiles,

shape memory materials and chromic materials. Conductive and other functional materials - characteristics, applications, factors affecting their selection and uses. Developments in nano-fibres and non-wovens. Survey of technical textiles and smart wear in Indian market.

**ATS 603 Textile Ecology** **2+0** **Sem II**

Industrialization, eco-balance and textile ecology. Air, noise and water pollution by mechanical and chemical textile processing and their effect. Treatment and disposal of textile effluents. Treatment processes of sewage and its importance. Health hazards of textile workers working in various textile units and their remedial measures. Banned dyes and auxiliaries. Eco-friendly production and processing of textiles with special reference to organic and naturally coloured cotton, natural dyes and detergents. Indian and International environmental legislations. Eco labeling, management and auditing.

**ATS 604 Recent Advances in Textile and Apparel Designing** **2+0** **Sem II**

Recent researches in production and manufacturing of textile fibers, yarn and fabric structures. Chemical processing of natural and synthetic textiles and their conversion into clothing. Developments in the field of functional textiles and clothing technology. Use of special techniques in textile processing. Thrust areas of contemporary research and future projections.

**ATS 605 Apparel Industrial Management** **2+0** **Sem.I**

Management issues in garment industries. Principles of effective management. Status of garment industry in India - production, marketing, distribution, consumption and export trends over last five years. Personnel management in domestic and export apparel industry. Techniques in managerial application of cost-volume-profit analysis and productivity analysis. Productivity rate. Problems of apparel industry and remedial measures. Trends in management, infrastructure facilities and incentives offered for starting a garment industry.

**ATS 606 Non-Woven Textiles** **2+0** **Sem I**

Characteristics and properties of polymers, fibres, binders and non-woven fabrics. Types of non-woven fabrics and their applications. Types of web formation, bonding and finishing processes. Felt fabrics, needle punched fabrics, spun laced fabrics, dry and wet laid non-woven fabrics, spun bonded and stitch bonded non-woven fabrics. Finishing non-wovens. Trends in non-woven technology. Scope of non-woven textiles. Identification of non-woven fabrics. Testing and evaluation of non-wovens. Laminated fabrics.

**ATS 607 Laboratory Techniques in Textile Research** **0+2** **Sem II**

Optimization of conditions for various dyeing, printing, finishing and enzyme treatments. Laboratory techniques for assessing colour strength and reflectance. Use of different scales to assess light, washing and rubbing fastness. Management and interpretation of data generated. Image analysis techniques. Visit to textile research image analysis laboratory.

**ATS 591 Seminar**

**ATS 600 Master's Research**

**ATS 700 Ph.D Research**

## FASHION DESIGNING

### B.Sc. (Hons) Fashion Designing - 4 Year Programme

<b>FD 101 Basics of Design Composition</b>	<b>1+2</b>	<b>Sem I</b>
Definition of art. Introduction to art media. Elements and principles of design. Dimensions of colour. Colour schemes - their importance and application. Types of motifs and trends in Indian art. Practical : Materials, equipment and techniques of drawing and rendering. Basic sketching techniques. Free hand sketching of various objects and scenes. Composition of floral, geometrical and abstract designs. Colour wheel - grey scales and various colour schemes. Developing colour combinations. Placement of motifs in repeat. Enlargement of motifs. Development of design portfolio.		
<b>FD 102 Visual Studies and Appreciation</b>	<b>0+2</b>	<b>Sem I</b>
Aesthetics in nature. Situational analysis and inspiration from different elements of nature. Nature drawing-leaves, flowers and trees. Shading techniques for creating different effects. Object drawing with reference to light and angle of sight.		
<b>FD 103 Introductory Textiles</b>	<b>2+1</b>	<b>Sem I</b>
Basic textile terminology. Classification of textile fibres. Properties and uses of natural and man-made fibres/fabrics. Different types of fabrics - woven, non-woven, knitted and felted. Classification, importance and utility of finishes applied on fabric. Labels and tags used in textiles. Practical : Identification of fibres by non-technical, burning, microscopic and chemical tests. Study of thread count and yarn types, drapability and weight of fabrics. Collection and interpretation of labels and tags used in yarns and fabrics. Survey of common fabrics available in the market. Stain removal.		
<b>FD 104 Introductory Sewing Techniques</b>	<b>0+3</b>	<b>Sem I</b>
Use of sewing equipment and supplies. Preparation for layout of fabrics - plain, printed, plaid and stripes. Handling specialty fabrics. Use of selected stitches, seams, seam finishes, gathers, pleats, tucks, placket openings and fasteners in infants' garments. Finishing of different necklines and baby collars. Market survey of infants' fabrics and garment designs. Application of different types of fabrics according to the garments. Preparation of infant's layette. Portfolio development.		
<b>FD 105 Dynamics of Fashion</b>	<b>2+0</b>	<b>Sem I</b>
Fashion terminology. Components of fashion. Movement of fashion - fashion cycle and its stages. Fashion adoption theories. Factors influencing fashion movement. Consumer identification with fashion.		
<b>FD 106 Introduction to Apparel Industry</b>	<b>2+0</b>	<b>Sem I</b>
Brief history and development of textile and apparel industry. SWOT analysis. Major apparel exporting and importing countries. Introduction and roles of various departments, design, sampling, sales, sourcing, merchandising and production. Future prospects of domestic and global apparel industry. Export oriented units and organizations for export promotion. Incentives given to apparel industry by the government - central and state.		
<b>FD 111 Fashion Drawing-I</b>	<b>0+2</b>	<b>Sem II</b>
Proportions of human figure - female. Developing female figures using figure guides. Sketching faces, hands, legs, feet, hair styles and accessories. Free-hand sketching of figures. Study of different silhouettes. Study of figure proportions in relation to draped apparel.		
<b>FD 112 Fashion Studies</b>	<b>2+0</b>	<b>Sem II</b>
Effect of different cultures on the development of fashion. Relationship between social, psychological, economic, demographic, life style factors and fashion trends. Exploration of fashion, art, architecture, textiles, costume, customs and rituals in major art and fashion cities of the world.		
<b>FD 113 Textile Decorations</b>	<b>0+3</b>	<b>Sem II</b>
Styles in fabric painting. Textile embellishment with pasementaries. Block, screen and stencil printing.		

Innovations in printing. Industrial survey of the popularly used printing techniques. Market survey of embellishments and pamentaries used in apparel. Report writing and presentation.

- FD 114 Pattern Making and Garment Construction-I** **1+2** **Sem II**  
 Basic terminology. Use of different techniques of garment construction - drafting, pattern making, flat pattern and draping. Different types of patterns. Children's body measurement chart.  
 Practical : Drafting of a child's bodice block and its adaptation. Designing and pattern making of frocks, tops, skirts, shirts and contemporary lower garments. Group assignment on children's line development.
- FD 115 Introduction to Knitwear Technology** **1+2** **Sem II**  
 Knitting terminology. Types, construction and working of knitting machines. Types of knitting. Different types of knitted fabrics. Qualities of knit structures. Status of knitwear industry in India.  
 Practical : Study of yarns for knitwear. Preparation of samples of tuck stitch, slip stitch and multi-coloured knitting. Preparation of samples of various designs by hand and machine knitting. Preparation of hand/ machine knitted articles. Visit to knitwear industry.
- FD 116 Woven Structures** **1+2** **Sem II**  
 Parts of a loom. Types of looms and loom operations. Types, characteristics and uses of different simple and novelty weaves. Defects in woven structures. Difference between knitted and woven structures.  
 Practical : Parts of a loom and loom motions. Preparation of drafts of different weaves. Design development on loom. Designing of a woven article. Collection of woven samples and their weave analysis.
- FD 201 Fashion Drawing-II** **0+3** **Sem I**  
 Proportions of human figure - kids. Developing kids figure using figure guides. Sketching of various garment details - collars, necklines, sleeves, cuffs, gathers, pleats and folds. Flat-sketching of various garments (front and back). Sketching of accessories. Costume anatomy (style lines). Garment draping on fashion figures. Designing garments for various age groups. Techniques of creating textures and patterns. Analysis of design collections of famous designers. Case studies of famous national and international designers. Development of fashion portfolio.
- FD 202 Merchandising Fashion** **2+2** **Sem I**  
 Careers in merchandising. Fashion merchandising concepts and responsibilities. Trade merchandising systems - international fashion market and domestic market. Policies for fashion distribution.. Fashion forecasting and market research. Merchandising fashion in relation to family cycle. Budgeting fashion merchandise - importance and types of financial plans.  
 Practical : Preparation of merchandiser's buying plan. Two week's internship in stores to study the merchandising system.
- FD 203 Traditional Textiles** **2+1** **Sem I**  
 Traditional textiles of various states of India. Design characteristics of various woven, dyed, printed and painted textiles.  
 Practical : Identification of different types of textiles - contemporary and modern. Collection of traditional motifs and designs used in textiles. Field visit.
- FD 204 Pattern Making and Garment Construction-II** **0+2** **Sem I**  
 Anthropometric measurements. Adult's body measurement chart. Developing adult bodice block. Different neck lines, yokes, collars and sleeves. Different types of trousers and skirts. Adaptation of bodice, designing and pattern making of various garments - blouse/blouson, corsets, jackets, skirts, trousers etc. Construction of selected garments. Portfolio development.
- FD 205 Knitwear Designing** **0+2** **Sem I**  
 Preparation of designed machine knitted samples. Embellishments of knitwears. Study of trends in knitwear. Designing and preparation of machine knitted articles. Portfolio presentation.
- FD 206 Costumes of the World** **2+1** **Sem I**  
 Study of historic costumes and accessories of ancient times - Egyptian, Asiatic, Greek, Roman, French and American in relation to fibres, fabrics, colours, motifs and designs used.

Practical : Collection of motifs and designs of historic costumes of world. Sketching of four western costumes and accessories. Adaptation of period costumes and designs to five garments of contemporary use.

- FD 207 Computer Aided Fashion Illustrations** **0+2** **Sem I**  
 Introduction to the tools. Drawing fashion figures. Designing and draping garments on croqui. Creating effects in various silhouettes. Drafting the basic blocks and fashion details - collars, sleeves, pockets, accessories.
- FD 211 Apparel Production Technology** **1+2** **Sem II**  
 Status of apparel industry in India. Structure of apparel industry. Automation in apparel industry. Garment production - sample development and designer's worksheet, pattern making, spreading and cutting, assembling, labeling and finishing. Challenges in apparel industry.  
 Practical : Exercises in development of worksheets and cost sheets for line development of apparel for children/adults. Visit to an apparel manufacturing unit.
- FD 212 Computer Aided Designing and Pattern Making** **0+4** **Sem II**  
 Designing various garments using CAD software. Pattern making and marker making of the designed garments for various age groups, using advanced softwares. Introduction to advanced illustration tools.
- FD 213 Draping and Flat Pattern Making** **0+3** **Sem II**  
 Terminology and importance of draping and flat pattern making. Tools and equipment used. Preparation of muslin cloth, steps in draping, marking and trueing. Draping basic patterns of bodice block, neck lines, collars, yokes and skirts. Adding and reducing fullness. Construction of selected draped garments - blouse, jacket, skirt, trousers/capris. Development of a sloper. Dart manipulation through flat pattern methods. Portfolio presentation.
- FD 214 Basics of Grading** **0+2** **Sem II**  
 General terminology. Importance of grading in readymade garments. Tools and equipment used. Computer aided grading. Types of grades. General principles and techniques of marker making; sloper development; increasing and decreasing patterns of bodice, sleeves, collars, pockets and styled garments. Portfolio presentation.
- FD 215 Indian Costumes** **2+1** **Sem II**  
 Study of Indian costumes and accessories of different regions of India from Indus Valley civilization to contemporary times.  
 Practical : Collection of motifs and designs of Indian costumes. Sketching of four Indian costumes and accessories. Adaptation of period costumes and designs to five garments of contemporary use.
- FD 216 Garment Production Machinery and Equipment** **1+1** **Sem II**  
 Introduction to industrial sewing machines. Different types of industrial sewing machines - single and double needle machines, button hole and tacker, overlock and interlock machines - their working and function. Care and maintenance of industrial machines.  
 Practical: Hands on training on machines, paper exercises, Machine operations, special attachments and their uses.
- FD 301 Retail Fashion Merchandising and Marketing** **2+1** **Sem I**  
 Buying terminology. Types of shopping centers. Retail fashion distribution and operations. Retail buying, selling and the fashion cycle. Interpreting customers' demand. Preparation of merchandise plan. Assortment planning and buying. Importance of record keeping. Sales training.  
 Practical : Developing inventories, stock reports and sales reports. Assortment planning for different types of customer profiles and stores. Sales training. Project work and report writing.
- FD 302 Quality Control** **2+2** **Sem I**  
 Introduction to quality control. Inspection of fabrics, sewing threads, zippers, ancillaries, linings and interlining. In-process inspection. Final inspection. Inspection of labels and packaging. Quality control through physical testing - bow and skewness, shrinkage, colour fastness, strength, crease recovery, drapability, abrasion resistance, light fastness, colour matching. Tests for non-textile accessories. Statistical quality control.

Practical : Study of various types of defects - yarn and fabric defects. Pilling and raising defects. Defects related to processing and embellishments. Defects in embroideries. Test for shrinkage, colour fastness, strength, crease recovery, abrasion resistance, pilling, light fastness, colour matching.

**FD 303 Commercial Product Designing** **0+3** **Sem I**

Exercises in design development, style reading, sample preparation, product costing. Drafting, cutting and stitching of garments for different age groups. Project work.

**FD 304 Graphic Design** **0+2** **Sem I**

Concepts of graphics and multimedia. Image manipulation techniques, image correction techniques. Designing brochures, catalogues and newspapers. Designing for publications. Use of different design softwares. Illustrating advertising concepts. Media publishing using in design, motion graphic techniques. 2D animation using macromedia flash. Layout designing, key framing and tweening techniques, introduction to action script programming for interactivity. Approaches to 3D animation. Rendering. Planning and preparing layouts of graphics for designing brochures, flyers, newsletters, stationery, postcards, ads and posters to promote products, product lines, fashion sales and fashion business. Case studies and project.

**FD 305 Dyeing Studies** **1+2** **Sem I**

Classes of dyes. Methods of dyeing. Dyeing machines and industrial dyeing.

Practical : Preparation of fabric for dyeing. Dyeing of cotton, wool and silk with different classes of dyes. Resist styles of dyeing. Recent dyeing processes used in industry - a survey.

**FD 306 Textile Printing** **1+2** **Sem I**

Terminology used in printing. Methods of printing different fabrics. Types of printing. Styles of printing - block, screen, stencil, roller and resist printing. Common printing defects, their causes and preventive measures.

Practical : Preparation of fabrics for printing. Optimization of printing paste using fixer, binder and colour. Preparation of samples of different styles of printing - block, screen, stencil, roller and resist. Developing products for personal and household use with any one or a combination of different styles of printing. Visit to a printing unit.

**FD 307 Trims and Accessories** **2+0** **Sem I**

Garment accessories - selection and design, functional utility and aesthetic performance. Characteristics of different types of trims and accessories- ribbons, braids, laces, buttons, zippers, snap fasteners, hooks & eyes, hook & loop tape, eyelets. Sourcing of different trims and accessories and preparation of a portfolio.

**FD 311 Fashion Communication** **1+1** **Sem II**

Concept, definition and scope of communication. Functions of mass communication through different media. Role of media in society and its need in fashion world. Media ethics. Creative writing. Interviews- types and how to conduct it. Designing catalogues and brochures. Editing and its various techniques. Event management- fashion shows and photo shoots.

Practical: Creative photo shoots, network fashion communication, writing of fashion articles.

**FD 312 Sociological, Psychological and Ethical Aspects of Fashion** **2+0** **Sem II**

Sociological factors influencing fashion - Impact of culture, society, myths and rituals, ethnocentrism and ethnic dresses and contemporary culture on fashion. Historic view of fashion history. Impact of demographic sub culture, age, race, income and social classes. Types of social influences, social comparison, compliance and obedience to norms. Fashion independence - resistance to influence, opinion leadership, buying and disposing of fashion. Psychological factors affecting fashion - group conformity, creativity, sexual attraction, fashion adoption leadership, individuality and brand consciousness. Ethics in fashion and ethical consumerism - Consumer protection, offensive fashion advertising, imitation, stealing of design concepts, adoption of ethical means for fashion brands, workers' rights, chemicals used in production and processing, labour issues, exploitation in fashion industry and other social and environmental effects.

**FD 313 Apparel Supply Chain Management** **2+0** **Sem II**

Introduction to supply chain management - its need and importance. Principles of supply chain development. Hierarchy of supply chain and its components. Critical analysis of nature of supply chain management for

products and services. Impact of global economy on supply management process. Integrated supply chain management. Strategies for customer service, quality and inventory management. Factors affecting the supply chain and their effective management. Case studies and critical evaluation of companies' supply chain development and management.

<b>FD 314 Visual Merchandising</b>	<b>1+1</b>	<b>Sem II</b>
Concept of visual merchandising. Definition, techniques, principles and importance. Theory of colour, form, composition and proportion. Study of store design objectives, techniques and layout. Practical : Project report on existing visual merchandising practices followed by different retail outlets. Presentation on visual illustration and merchandising on selected themes.		
<b>FD 315 Craft Documentation</b>	<b>2+4</b>	<b>Sem II</b>
Use of primary and secondary sources for documentation of selected craft- history, region, motifs, design, equipment, production process and techniques, finishing, marketing, uses and product range of a craft. Evolution of the craft from traditional to contemporary times. Practical: Developing a manual of motifs, design, equipment, production process & techniques and finishing of a selected craft from craft hub. Training in the production of the craft from artisans.		
<b>FD 401 Green Technologies in Apparel Manufacturing</b>	<b>2+0</b>	<b>Sem I</b>
Use of certified organic natural fibers (wool, cotton, linen etc.). Use of highly renewable fibers (bamboo, soy etc.). Use of low impact synthetic or recycled fibers. Use of non toxic or reduced toxicity fiber processes and treatments. Use of low impact or natural dyes. Design and colour choices aimed at longevity rather than planned obsolescence. Reduced energy use throughout the product life cycle. Minimal or environmentally appropriate packaging. Importance of carbon credits in apparel and textile manufacturing. Fashion Industry and the environmental issues- use of chemical dyes, cruelty to animals and humans, concern for environment, certifications etc.		
<b>FD 402 Experiential Learning in Fashion and Lifestyle Products</b>	<b>0+12</b>	<b>Sem I</b>
Orientation to experiential learning. Project report on setting up of a 'Fashion and Lifestyle Products' enterprise. Running and managing a 'Fashion and Lifestyle Products' enterprise - market survey, need assessment, designing, construction & costing of prototype, getting orders, production, packaging and shipment. Developing a product catalogue. Redressal of problems in running 'Fashion and Lifestyle Products' enterprise.		
<b>FD 410 Seminar</b>	<b>0+2</b>	<b>Sem I</b>
<b>FD 411 Product Line Development/ Presentation</b>	<b>0+6</b>	<b>Sem II</b>
<b>FD 419 Internship-I</b>	<b>0+12 (NC)</b>	<b>Sem II</b>
<b>FD 420 Internship-II</b>	<b>0+4</b>	<b>Sem II</b>

### **Postgraduate Courses**

<b>FD 501 Apparel Brand Management</b>	<b>2+0</b>	<b>Sem I</b>
Concept and understanding of brand. Contemporary definitions and theories of branding. The changing role of promotion and design in developing brands. Use of brands in modern society and institutions. Understanding consumer, their interests and demands. Effect of social, economical and political factors on brand development. Developing Company's Logo. Themes in branding- Intellectual property rights, changing media environment, globalization and international trade, impact of digital communication and marketing technologies. Appraisal of current branding usage - large corporations and media organizations, public sector bodies, charities, sports organizations and educational establishments.		
<b>FD 502 Design Illustrations</b>	<b>0+2</b>	<b>Sem I</b>
Introduction to geometric, muscled and fleshed male figure. Sketching of different features and postures of male croquis. Different silhouettes of men's apparel. Draping male figure in casual, sports and formal		

wear. Designing a collection of five ensembles of men's wear on specific themes and draping on fashion figures. Designing a collection of five ensembles of women's wear on specific themes and draping on fashion figures. Rendering of different fabrics - prints (woven and knitted), denims, plain coloured fabrics, pile fabrics and textured fabrics. Defining a personal designer style with innovative sketches of men and women draped apparel and preparation of a portfolio.

**FD 503 Design Studio** **0+3** **Sem I**

Designing, pattern making, garment construction and development of specification sheet of any one formal men's and any one formal women's wear. Understanding of different fashion seasons - spring, summer, autumn and fall winter. Factors to be kept in mind while designing for different fashion seasons like time, fabrics, accessories, fashion trends, etc. Pattern making, garment construction and development of specification sheet of a garment range comprising of three garments for any one season.

**FD 504 Fashion Retailing and Marketing** **2+1** **Sem II**

Concept of Retailing and different types of Retail outlets. Management of operation of different types of retail outlets like chain store, specialty store, departmental store etc. Importance of four P's of marketing. Online buyer to buyer and buyer to consumer selling. Negotiating store purchases and discounts. Importance of store environment and atmosphere. Principles of visual merchandising and store layout. Importance of visual merchandising in boosting up sales.

Practical: Survey of different retail outlets and comparison of their 4 p's of marketing. Study of visual merchandising in different retail outlets. Arranging window and stock displays for men, women and children section

**FD 505 Apparel Exim Management** **2+0** **Sem II**

Handling overseas enquiries. Documentation of import and export markets. Study of import restrictions, antidumping and countervailing duties. Policies and procedure of apparel export. Introduction to the tariff. Importance and various terms of LC. Sources of assistance- state, central and financial institutes like banks. Export promotion, infrastructure facilities and incentives. Handling shipment - processes and procedures. Impact of government policies on export market.

**FD 506 Apparel Production, Planning and Costing** **2+0** **Sem II**

Pre-production planning. Different Manufacturing Systems. Production schedule. Time and motion studies- importance and technique. Lean Manufacturing and other advanced concepts in production. Advancements in cutting room operations- planning, fusing, sewing and pressing. Advancements in sewing room operations- layering and marker planning. Apparel industrial waste management and zero waste concept. Reduction of waste production, energy consumption and production time. Production costing- fabric, labour, overhead cost and garment costing.

**FD 507 Computer Aided Designing** **0+2** **Sem I**

Introduction to advanced CAD / CAM system. Understanding of different options for creation of woven, printed and knitted fabrics as well as other tools for sketching and managing collections. Study of marker planning using advanced CAD/CAM system. Study of CAD application software for product design, pattern making and 3-D prototyping. Introduction to options for better finished apparel for men, women and children. Study of flexible work flow and sourcing functions tailored to the needs of fashion sector.

**FD 508 Fashion Consumer Behaviour** **1+1** **Sem I**

Importance of consumer. Consumer and marketing interrelation. Consumer dynamics- motivation and values. Effect of global market on consumer behaviour. Manipulation of consumers by marketers and compulsive buying. Social responsibility of consumers. Consumer protection.

Practical: Surveys to study consumer marketing relationship.

**FD 531 Industry Internship** **0+3 (NC)**

**FD 591 Seminar**

**FD 600 Master's Research**



## FOOD AND NUTRITION

### PROGRAMMES

1. **B.Sc. (Hons) Nutrition and Dietetics**
2. **M.Sc.**
3. **Ph.D**

### COURSE REQUIREMENTS

#### M.Sc.

Field of specialization	Dietetics, Community Nutrition
Required courses	FN 501, FN 502, FN 503, FN 504, FN 505
Supporting courses	Stat 421, PGS 501 and other courses from subject matter fields (other than Minor) relating to area of special interest and research problem.
Minor field	Food Science and Technology, Biochemistry, Microbiology, Biotechnology or any other as approved by the Dean, Postgraduate Studies.
Deficiency courses for students with elective other than Food and Nutrition	9-12 credit hours of atleast 400 series courses as recommended by the Student's Advisory Committee and approved by the Dean, Postgraduate Studies

#### Ph.D

Field of specialization	Dietetics, Community Nutrition
Required courses	FN 601, FN 602, FN 603, FN 604
Supporting courses	Courses from subject matter fields (other than Minor) relating to area of special interest and research problem.
Minor field	Food Science and Technology, Biochemistry, Microbiology, Biotechnology or any other as approved by the Dean Postgraduate Studies.
Deficiency courses for students with M.Sc. (Home Science) in a discipline other than Food and Nutrition.	FN 501, FN 502, FN 503, FN 504, FN 505, and other courses as recommended by Student's Advisory Committee and approved by the Dean, Postgraduate Studies

## DESCRIPTION OF COURSE CONTENTS

### Undergraduate Courses

- FN 91 Personality Development** **1+1** **Sem I**  
Personality: meaning and types. Components of personality development. Non-verbal communication and body language. Manners, etiquettes and situational cues. Verbal communication. Types of conversations. Personal grooming: role of personal health and hygiene, balanced diet and exercise in grooming. Importance of clothing and accessories. Motivation and personal enrichment.  
Practical: Table setting. Manners and etiquettes. Exercises for keeping fit. Yoga for health and well being. Exercises in personal grooming. Being a good host and good guest. Interpreting non verbal communication, body language and situational cues.
- FN 101/N Diet. 101 Introduction to Foods** **2+1** **Sem I**  
Defining terms used in cookery. Food and its functions. Psychocultural aspects of foods. Food groups and the nutrients contributed by each group to the diet. Concept and components of balanced diet. Composition and nutritive value of cereals, pulses, dairy products, meat, fish and poultry, vegetables, fruits, fats and oils, sugar and jaggery, spices and condiments. Scientific principles relating to foods and their preparation with emphasis on nutritional concepts in food preparations. Purposes and methods of cooking and their effect on the taste, nutrients and appearance.  
Practical: Orientation to foods. Working instructions in cooking laboratory. Equipment, tools, weights and measures used in the kitchen. Market survey of essential raw and processed food products. Preparation of spices, their combination and mixtures. Preparation of dishes and beverages using cereals, pulses, fruits, vegetables, milk and milk products, egg, fish and meat. Use of leftover foods.
- FN 102/N Diet. 102 Fundamentals of Nutrition** **3+0** **Sem III**  
Introduction and overview of basic principles of nutrition. Definition of terms used therein. Interrelationship of health with nutrition. Recommended Dietary Allowances for Indians and factors affecting these viz age, sex, physical activity and physiological state. Classification, functions, sources, digestion, absorption and effects of deficiency/excess of carbohydrates, fats and proteins on human health. Classification, functions, sources, deficiencies and toxicities of fat soluble vitamins - ADEK and water soluble vitamins - B-complex (Thiamine, Riboflavin, Niacin, Pantothenic acid, Folic acid and B12) and vitamin C. Classification, functions, sources, absorption and effects of deficiencies/excess of minerals - calcium, phosphorus, iron, iodine, fluorine, magnesium. Importance of water in nutrition.
- FN 103 Principles of Human Nutrition** **2+1** **Sem II**  
(for students of B.Tech. Food Technology)  
Food and its functions - energy giving, body building, protecting and regulating. Basic food groups. Nutrients, their functions, sources and deficiency diseases - proteins, carbohydrates, lipids, vitamins - fat soluble (Vit. A, D, E, K) and water soluble, vit. C and B complex), minerals - calcium, phosphorus, iron, iodine, fluorine and zinc. Concept of balanced diet. Recommended Dietary Allowances (RDA) for various age groups according to their physiological status for specific nutrients and energy. Water and electrolyte balance - functions and distribution in body. Basal metabolism - methods of measurement and factors affecting BMR. Types and causes of malnutrition, epidemiology of under nutrition and over nutrition.. Nutrition, infection and immunity. Nutritional status using dietary survey, anthropometry, clinical signs and biochemical methods. Nutrition education, nutrition policies and their implementation. Non-conventional foods and their use.  
Practical: Computation of energy requirements on the basis of physical activity and adult consumption units. Standardization of snacks and meals. Planning and preparation of balanced diets for the adults in family. Diet survey and anthropometric measurements of vulnerable groups in community.

- FN 201/N Diet. 105 Home Scale Food Preservation and Storage** **1+2** **Sem I**  
 Scope of food preservation and storage. Classification of foods on the basis of shelf life. Food spoilage - causes and effects. Principles and methods of food preservation - drying and dehydration, use of high and low temperature, foods as preservatives, use of chemicals, radiation and combination of above methods. Storage of common perishable, semi-perishable and non-perishable foods. Selection and purchase of foods for preservation. Food standards and quality control. Packaging and packing materials, labelling and costing of products. Food additives, preservatives, anti-oxidants, colouring matter and emulsifying agents. Practical: Availability of preserved foods in the market. Drying of blanched and unblanched fruits and vegetables by solar, sun and oven drying methods. Domestic preservation of foods by freezing. Preparation and storage of squashes and syrups, cordials, jams, jellies, marmalades, preserves, ketchup/sauces, chutneys, pickles with and without oil. Preparation of items utilizing cereals and legumes and their storage. Preparation of sugar candies. Demonstration of canning and bottling of fruits and vegetables. Demonstration on storage of food grains in rural and urban situations on small scale.
- FN 202/N Diet. 106 Community Nutrition** **2+1** **Sem II**  
 Concept of community, health, malnutrition, maternal and infant mortality, morbidity, nutritional status. Assessment of nutritional status using dietary survey, anthropometry, clinical symptoms and biochemical methods. Major nutritional problems prevalent in India and Punjab - protein energy malnutrition, iron deficiency anaemia, vitamin A deficiency, iodine deficiency disorders and fluorosis. Role of community kitchens in combating malnutrition. National nutrition programmes and policies. Global nutrition. Role of national and international agencies in improving nutritional status of the community. Concept of food adulteration, common adulterants, their health hazards, prevention and control. Principles, methods and evaluation of nutrition education programmes. Nutrition surveillance.  
 Practical: Assessment of nutritional status of an individual/community using anthropometry, dietary survey and clinical signs and symptoms. Visit to an Integrated Child Development Services block and Primary Health Centre. Development of audio visual aids for imparting nutrition education. Planning, implementation and evaluation of nutrition education for specific target groups.
- FN 301/N Diet. 201 Normal and Therapeutic Nutrition** **2+1** **Sem I**  
 Importance of meal planning and factors to be considered while planning meals. Use of food groups and exchange list, calorie consumption units in planning meals for a family. Physiological changes and nutritional requirements during pregnancy and lactation. Growth, development and nutritional requirements during infancy. Breast feeding vs bottle feeding and complementary feeding. Growth, development, food habits and nutritional requirements of pre-schoolers, school going children and adolescents. Physiological changes during old age and meeting their nutritional requirements. Modification of normal diet to therapeutic diets and its importance. Normal and artificial methods of feeding. Causes, symptoms and dietary management in fevers, diarrhoea, constipation, obesity, liver diseases, cardiovascular diseases.  
 Practical: Planning and preparation of balanced diet for adults, preschool and school going children, adolescents and old age. Planning and preparation of diets for pregnant and lactating women. Preparation of infant feed formula and complementary foods. Planning and preparation of diets for special occasions - birthdays, festivals, packed lunches. Planning and preparation of diets during selected disorders - typhoid, diarrhoea, constipation, hepatitis, hypertension, diabetes, over weight/obesity.
- FN 302/N Diet. 202 Nutrition for Special Groups** **3+0** **Sem II/I**  
 An overview of groups with special nutritional needs. Relationship of nutrition with health of an individual with special needs. Traditional dietary habits and food restrictions of minority ethnic communities. Trends in vegetarianism. Nutrition for population below poverty line, refugees, asylum seekers, homeless people in orphanages and senior citizen homes. Meeting nutritional requirements during famines, floods and other natural calamities. Current nutrition and health status of women and children in India. Dietary management of industrial workers, sports persons, astronauts and defense personnel. Nutrition intervention to promote health.
- FN 303/N Diet. 103 Food Hygiene and Sanitation** **2+1** **Sem II/I**  
 Concept, significance and interrelationship of health, hygiene and sanitation. Characteristics of good health and factors affecting it. Inculcating hygienic habits to promote health. Kitchen hygiene and sanitation.

Sources of water contamination and its purification at domestic level. Causes of air pollution and its ill effects on health. Causes, symptoms and control of food borne diseases - diarrhoea, dysentery, cholera, typhoid, jaundice. Soil impurities, their effect on health and its prevention and control. Accidental and bacterial food poisoning. Symptoms and prevention of food poisoning. Municipal health services and mobile units. Prevention and control of infectious diseases. Notification, quarantine, segregation and disinfection. Health services at fairs and festivals. Removal and disposal of refuse and excreta. Sanitary drainage fittings.

Practical : Personal and environmental hygiene. Preparation of oral rehydration solution (ORS). Chlorination of water. Control of infestation - rodent control, proofing and destruction of rats, mice etc. Visit to primary health centre and civil hospital. Organization of health and hygiene camp.

**FN 304 Bakery and Confectionery** **1+3** **Sem II**

Terms and techniques used in bakery. Selection, properties and functions of flour, fat, sugar, eggs, salt, milk, yeast, baking powder used in bakery and confectionery. Role of gluten and starch in bakery products. Rheological properties of doughs and batters. Emulsifiers used in bakery. Balancing the formula for bakery products. Baking faults and their remedies. Quality control of bakery products

Practical: Use of different bakery equipments. Balancing the formula for bakery products. Standard methods of making different types of biscuits - sweet, salty, tricolour, high fibre and melting moments, cookies - peanuts, cornflakes, and choco chips, coconut macrons - nan khatai.. Sponge, caramel, chocolate, lemon, eggless, date and walnut cakes, coconut castles, cup cakes, flaky pastry, short crust pastry, puff pastry, cream rolls, swiss rolls, bread, buns, doughnuts, pizzas, puddings, tarts. Icings and cake decoration. Standard methods of making toffees and chocolates. Use of crystalline and non crystalline sugars in different preparations.

**FN 305/N Diet. 204 Institutional Food Service Management** **2+2** **Sem II**

Types of food service institutions. Styles of food services. Planning, writing, types and preparation of menu and menu cards. Menu display. Floor planning and layout. Principles, functions and tools of management. Personnel management - selection and training, desirable qualities and responsibilities. Employee's facilities and benefits. Selection, purchase and storage of food. Financial management, cost concept, food cost control, pricing, budget and accounting, systems of book keeping. Selection, purchase, installation, operation, care and maintenance of equipment. Hygiene in food handling and personal hygiene.

Practical - Standardization of recipes of snacks and a meal for portion and cost. Development of recipe book. Preparation of various types of menu cards. Table setting, tray service of tea and snacks for 25 persons. Running a canteen for one day. Serving high tea to 20 persons and a meal to 10 persons. Preparation and service of packed lunch. Maintenance of accounts and record keeping. Visit to different food service institutions.

**FN401 Catering Management** **0+2** **Sem I**

Quantity food production and cost calculation of snacks and meals, Preparation and service of high teas /formal lunches. Packed lunch for students, teachers and office staff.

**FN 402/N Diet. 301 Food Science** **2+2** **Sem I**

Composition, physical and rheological properties and nutritive value of food stuffs. Sols, gels, foams, emulsions, colloids and their application in food preparation. Effect of pH on foods. Coagulation and denaturation of proteins. Enzymes and their utilisation in foods industry. Enzymatic and non-enzymatic browning reaction. Use of chemical and biological leavening agents in food preparation. Physical, chemical and nutritional changes occurring in foods during processing and storage. Sensory evaluation of food products. Functional foods.

Practical: Cooking quality, characteristics and use of cereals (wheat and rice), gluten content of wheat flours in relation to their suitability for the preparation of chapaties, cookies and bread. Vegetable and fruit cookery - effect of different methods of blanching and drying on carrots, green leafy vegetables, cauliflower, peas and potatoes. Principles involved in sugar cookery and its effect on amla, papaya, apple and mango. Preparation of low calorie recipes from milk, curd and cheese. Effect of cooking on egg and meat preparations. Preparation of mayonnaise. Melting and smoking points of fats and fat absorption in different products.

Sensory evaluation of recipes prepared from non-conventional and locally available low cost nutritious foods.

**FN 403/N Diet. 302 Food Standards and Quality Control** **2+1** **Sem I**

Importance of quality control and assurance. Food laws and regulations - Prevention of Food Adulteration Act, Fruit Product Order, Agmark, Essential Commodity Act and Consumer Protection Act, Bureau of Indian Standard, Codex Standards, Hazard Analysis and Critical Control Point. Sampling procedure. Application of food standards, sampling and specifications for raw foods and food products for additives, preservatives, colouring matters, anti-oxidants, emulsifying and stabilizing agents. Various methods for the assessment of quality of different foods. Selection of sensory panel and sensory evaluation of food products. Grading and marketing standards, specifications of finished products. Assessment and prevention of food adulteration.

Practical : Examination of agriculture, horticulture and animal foods and food products in relation to different standards - Prevention of Food Adulteration Act, Food Product Order, Agmark, Bureau of Indian Standards, Codex Standards, Hazard Analysis and Critical Control Point. Visit to quality control laboratory and food processing industries. Market survey of processed foods for quality assurance; development of score cards and evaluation of different foods.

**FN 404/N Diet. 303 Food Toxicology** **2+0** **Sem I**

Introduction and significance of food toxicology. Types, causative factors, signs, symptoms and preventive measures of food poisoning. Natural food toxins. Anti-nutritional factors, fungal and seafood toxins, goiterogens and carcinogens, their harmful effects and methods of removal. Concept of microbial toxins and food intoxication, sources of contamination, effect on health, preventive measures and methods of inactivation/ destruction. Chemical toxins - pesticides, metallic and radioactive materials in food, residual effects, preventive measures, methods of removal. Food packaging material and potential contaminants. Hazards of plastic packaging during storage and transportation and their effect on health.

**FN 405/N Diet. 304 Diet Therapy and Nutrition Support** **2+2** **Sem I**

Principles of dietetics. Dietician as a part of medical team and outreach services. Structure, administration and functions of dietary department. Food service in hospital. Clinical information, medical history, assessment of patient profile. Methods of dietary assessment. Therapeutic adaptation to normal diet for consistency, temperature, nutrients and amount for febrile diseases, gastric, renal, liver and metabolic disorders. Dietary modification for obesity, hypertension and heart diseases. Modes of feeding - enteral and parenteral feeding. Composition of tube feeding. Aesthetic attributes of diets.

Practical: Lay out of a dietetics department. Modification and preparation of diets for therapeutic purposes in terms of consistency, nutrients, temperature and quantity. Preparation of list of foods need to be avoided and/or included in different diseases - diabetes, cardiovascular diseases, diarrhoea, constipation, peptic ulcer, jaundice and kidney diseases. Planning, preparation and serving of diets low/high in energy, fibre, protein, lipids, carbohydrates, sodium, potassium, vitamin A and iron in reference to common diseases. Planning and preparation of diets for patients suffering from more than one disease - kidney, diabetes, Coronary Heart Disease. Visit to dietary department of a hospital. Observation of clinical signs and diet served/consumed by patients.

**FN 406 Food Product Development** **1+1** **Sem I**

Importance, scope and factors influencing product development. Development of new products. Selection and storage of raw material for development of products. Sensory evaluation tests and standardization of value added products - soups and beverages, chapaties, vegetables, snacks, continental dishes. Different packaging material required for food products. Economics of products.

Practical: Market survey of available processed products in view of cost, label and quality assurance mark. Panel selection and training on sensory evaluation. Standardization of products - soups and beverages, chapaties, vegetables, snacks, continental dishes. Pricing, packaging and labeling of the standardized food products.

**FN 421 Internship- I Entrepreneurial Placement/Inplant Training** **0+2** **Sem II**

Acquaintance with the working of dietary departments in the hospitals. To record the clinical, nutritional and biochemical profile of the patients and modification of diets accordingly. Prescription of therapeutic diets. Organization, management and administration in institutions such as canteen/ cafeteria, nursery

school/ day care centre/ hostel mess for one week. Visit to different food service institutions. Training in food service institutions.

**FN 422 Internship II - Project Report and Presentation** **0+4 NC** **Sem II**

Development of entrepreneurial and managerial skills. Preparation of project proposal for establishing diet counselling cell including resource mobilisation, finance, raw material, site and manpower. Report writing and presentation.

**FN 423 Internship III - Experiential Learning in Bakery and Confectionery** **0+8** **Sem II**

Selection and purchase of material used in bakery & confectionery for the preparation of value added products. Preparation of baked and confectionery items like cakes, biscuits, chocolates, toffees at large scale and their standardisation for portion and cost. Imparting skills among students regarding various aspects of bakery and confectionery i.e. planning, organizing and controlling the management of bakery unit for entrepreneurship development.

### **Postgraduate Courses**

**FN 501 Macronutrients in Human Nutrition** **2+1** **Sem I**

Body composition. Nutritional requirements and dietary allowances. Factors affecting requirements. Methods of estimation and formulation of recommended allowances of energy and protein for different age and activity groups. Functions, sources, requirements, digestion and absorption of carbohydrates. Composition, classification, functions and role of dietary fibre in various physiological disorders. Classifications, functions, sources, digestion and absorption of proteins. Methods of assessing of protein quality. Classifications, functions, sources, digestion, absorption and deficiency disorders of lipids, essential fatty acids. Regulation of food intake. Relationship between energy and protein requirements. Nutrient adaptation to low intake of energy and protein.

Practical: Measurement of basal metabolic rate. Calculation of energy requirements of population. Estimation of energy, proteins, fats, limiting amino acids and fatty acids in food stuffs. Blood analysis for haemoglobin, serum proteins, globulin, albumin and glucose. Urine analysis for nitrogen, urea, uric acid, creatinine and sulphur.

**FN 502 Micronutrients in Human Nutrition** **2+1** **Sem I**

Functions, food sources, absorption and utilization of vitamins and minerals in human body. Factors affecting requirements and formulation of recommended dietary allowances of minerals and vitamins. Methods of determining the requirements. Deficiency and toxicity of vitamins and minerals. Nutritional adaptation to low vitamins and minerals intake. Inter-relationship between vitamins, minerals and hormones. Water balance, acid base balance in human body.

Practical: Estimation of important minerals and vitamins from foods and biological materials. A human balance study for vitamin C and iron, determining availability of water soluble vitamins.

**FN 503 Food Analysis** **1+2** **Sem II**

Familiarization to terms and calculations used in preparation of various standard solutions. Sample and sampling techniques. Principles, techniques and applications of colorimeter, spectrophotometer and atomic absorption spectrophotometer. Principles, techniques and applications of fluorimetry, flame photometry and electrophoresis. Principles, techniques and application of paper, thin layer, gas liquid and high pressure liquid chromatography. Introduction to animal assay.

Practical: Handling of equipment and instruments. Preparation of samples, solutions and buffers, quantitative estimation of proximate principles, minerals and vitamins by use of colorimetry, flame photometry, UV spectrophotometer, chromatography, atomic absorption spectrophotometer and photofluorometry. Analysis of antinutritional factors, estimation of protein and starch digestibility. Fractionation of protein. Methods of detection of food adulteration.

**FN 504 Applied and Community Nutrition** **2+1** **Sem II**

Assessment of the nutritional status at individual, household and institutional level, direct and indirect methods. Ecological, socio-cultural, economic and demographic correlations of malnutrition. Prevalence, etiology, biochemical and metabolic changes in Protein Energy Malnutrition (PEM), vitamin A deficiency, iron deficiency anaemia, Iodine Deficiency Disorder (IDD). Major nutritional problems of the state, nation

and world. Nutrition intervention- Importance, methods of nutrition intervention and their impact evaluation. National nutrition programmes and policies, nutritional surveillance. National programmes and policies regarding food production and distribution.

Practical : Development of low cost nutritious recipes suitable for various vulnerable groups. Visit to the ongoing public health nutrition centre and report writing. Techniques of assessment of nutritional status. Studying existing dietary practices, planning and conducting dietary survey, analyzing data and writing report. Development, implementation and evaluation of community nutrition and health programmes.

**FN 505 Nutrition, Physical Fitness and Immunity** **3+0** **Sem II**

Overview of nutritional management vis-à-vis body composition and physical fitness. Body composition in different physiological conditions and factors affecting it. Methods of measuring direct and indirect body composition. Importance and factors influencing energy metabolism and physical fitness. Techniques to measure energy expenditure and energy intake. Techniques to assess physical fitness. Aging theories, physiology, mechanism and role of nutrients in arresting aging process. Classification of immunity and immunological responses. Mechanism of phagocytosis and antigen antibody reactions. Regulation of immunity. Mucosal defense system and effects of nutrients. Effect of malnutrition on immunity. Role of carbohydrates and fats on immune system. Factors affecting acquired immunity. Protein and immune functions, effect of arginine, glutamine and sulphur amino acids. Glutathione and immune system. Effect of deficiency and excess of vitamins and minerals on immune cell functions. Role of immunization. Effect of probiotics, prebiotics and antioxidants on immune function. Immunity against infection

**FN 506 Clinical Nutrition** **1+1** **Sem I**

Principles and interpretation of clinical laboratory methods with particular emphasis on their interpretation relative to nutritional status and disease. Interaction between nutrients, infections and drugs. Nutrient interrelationship, historical background, epidemiology, preventive and therapeutic measures of protein energy malnutrition.

Practical: Biochemical analysis of blood under normal and diseased conditions for glucose, calcium, iron, creatin, urea, uric acid, creatinine, albumin, globulin, cholesterol, phosphate, glutamate oxaloacetate transaminase, glutamate pyruvate transaminase, phospholipids. Analysis of urine for specific metabolites under normal and diseased conditions. Estimation of alkaline phosphatase, Serum Glutamate Oxaloacetate Transaminase (SGOT) and Serum Glutamate Pyruvate Transaminase (SGPT).

**FN 507 Therapeutic Nutrition** **2+1** **Sem II**

Importance and scope of diet therapy. Therapeutic adaptation of a normal diet. Newer concepts in dietary management of various nutritional disorders and disease conditions -fevers, infections. Dietary management during burns, allergy, gastrointestinal and liver diseases. Dietary management of cardiovascular diseases, renal disorders and obesity. Dietary management of diabetes, cancer and HIV. Nutrition in critical care. Role of dietician in a health care team in hospital and community. Health foods and supplements. Dietary recommendations for blood donors.

Practical: Formulation of food exchanges. Therapeutic modifications of diet in terms of nutrients, consistency and composition for various disorders and diseases. Preparation of Subjective Objective Assessment Plan (SOAP) notes and case studies. Visit to hospitals. Internship of one month in a hospital.

**FN 508 Nutrition Counselling** **0+2** **Sem I**

Procedure of nutritional counselling in clinical practice. Preparing nutritional and dietary care plans for individuals and groups. Development of resources and dietary guidelines for counselling. Records required for follow up study, group discussion and motivation as tools to bring attitudinal changes in food selection and preparation. Exercises on writing scientific facts in simple manner for the people. Use of exhibitions, demonstrations and workshops. Setting up counselling unit. Counselling in outpatient wards in local hospitals. Simulation techniques for counselling in selected settings.

**FN 509 Food Service Management** **1+2** **Sem I**

Development of food service organization and recent trends. Types of food services. Types of organisation and tools of management. Menu planning and meal services management Types of food services. Quantity food production, principles involved in development of recipes in large scale cooking. Planning of layout and equipment for food services. Sanitation and hygiene in handling foods. Personal hygiene and its

importance. Personnel management. Books and record keeping. Cost control in food services. Dish washing.

Practical: Planning, preparation, modification in basic recipe and preparation of standard recipes. Use of left over foods. Visit to different types of food service institutions and study about the organization, physical plan and layout, food service equipment, sanitation and hygiene. Practical experience in organization and management of a college cafeteria/ hostels.

**FN 510 Nutrition During Life Cycle** **3+0** **Sem II**

Food and nutrient requirements of adults according to sex, occupation and physiological conditions. Physiological changes during pregnancy, weight gain, food and nutrient requirements, storage of nutrients and impact of good nutrition on the outcome of pregnancy, complications of pregnancy and their nutritional management. Physiology of lactation, food and nutrient requirement, impact of nutrition on efficiency of milk production. Role of nutrition in growth and development of infants. Nutrient requirements, feeding of infants, breast feeding vs artificial feeding, types of milk and their use in infant feeding. Feeding the premature and low birth weight infants. Complementary feeding. Nutritional disorders and common ailments in infancy, feeding the sick child, immunization schedule and growth charts. Physical and mental growth, development, food habits and nutritional requirements of preschool and school children. Prevalence of malnutrition in children and supplementary feeding. Physical and physiological changes, nutritional requirements, food preferences and eating disorders of adolescents. Physical and physiological changes during old age, their nutritional requirements and health problems.

**FN 511 Development and Evaluation of Food Products** **1+1** **Sem I**

Basic principles of food product development. Sensory properties of food and their role in product development. Formulation and evaluation of recipes, their nutritive value and costing per portion. Methods of sensory evaluation of food. Selection and training of judges. Development of score cards and analysis of data. Development of schedule and data analysis for consumer evaluation. Packaging materials and types for different products. Food labeling. Food safety issues in product development, food quality regulations and standards. Methods of quality control. Modification of developed products for therapeutic use.

Practical: Sensory evaluation of developed products by various methods, training of judges, score card preparation. Selection and modification of food products for therapeutic use. Formulation and standardization of products. Evaluation of consumer acceptability. Packaging of developed food products.

**FN 512/FT 501 Principles of Food Processing** **2+1** **Sem I**

Scope of food processing and historical developments. Principles and methods of food processing and preservation - blanching, pasteurization, sterilization and UHT processing, aseptic processing, canning, extrusion, baking, roasting, frying, drying, concentration and evaporation dielectric and microwave heating, refrigeration, freezing, controlled atmosphere (CA), modified atmosphere (MA), and dehydro-freezing. Non-thermal methods - irradiation, high pressure, pulse electric field, hurdle technology, minimal processing and membrane technology. Food fermentations, pickling, smoking and chemical preservation.

Practical: Canning, freeze drying, dehydration, concentration, refrigeration and freezing of foods. Determination of thermal inactivation time of enzymes. Use of chemicals in preservation of foods. Extrusion cooking. Preparation of intermediate moisture and fermented foods. Visit to a food processing plant.

**FN 601 Advances in Macronutrients** **3+0** **Sem II**

Carbohydrates, proteins and lipids-their digestion, absorption, metabolism. Inborn errors of metabolism. Metabolic disorders like diabetes and obesity. Glucose homeostasis determined by insulin/glycogen ratio, carbohydrates free diet and its metabolic consequences. Dietary fiber, composition, classification, functions and role in various physiological disorders. Hypolipidemic action of rice bran, oat, barley and legumes. New discoveries in protein and their functions such as protein in immune system, as lubricants, biological buffers and carriers. Amino acid pool, protein turnover in man with special reference to body size, age and various pathological conditions. Novel food/sources of protein. Role of hormones on protein metabolism. Effect of dietary protein on cardiovascular disease and cholesterol metabolism. Adaptation of body to low intake of energy and protein. Estimation of body fat, lipoproteins and hyper lipoproteinemia. Hypolipidemic action of PUFA, omega-3 fatty acids and oxidation products of cholesterol. Fish oils in health and disease. Disturbance in lipid metabolism, role of modified diet in cardiovascular disorders. Causes, prevention and treatment of high blood cholesterol.



- FN 602 Advances in Vitamins and Hormones** **2+0** **Sem II**  
 History of vitamins and hormones. Causes of vitamin deficiencies in India. Chronology, chemistry, distribution, functions, absorption, transport, metabolism, deficiency manifestations of vitamins. Nutritional requirements, methods of assay of vitamins. Interaction with other nutrients, antagonists and analogues of vitamins. Hypervitaminosis of water and fat soluble vitamins. Vitamin fortification and supplementation. Endocrine and exocrine secretion of hormones, organs of secretion, metabolism, mechanism of action, regulation and sites of action, biological effects and interaction. Assessments of vitamin status of population. Antioxidants and their relationship with aging, cancer and other metabolic disorders.
- FN 603 Minerals in Human Nutrition** **2+0** **Sem II**  
 Causes of macro and micro mineral deficiencies in India. Chronology, chemistry, distribution, functions, absorption, transport, metabolism, deficiency manifestations, nutritional requirements and methods of assay of minerals. Interactions of minerals with other nutrients, antagonists and analogues of minerals. Assessment of mineral status of population. Mineral fortification and supplementation, Harmful effects of major mineral pollutants on health, mutagenicity, carcinogenicity, teratogenicity, heavy metal toxicity. Use of mineral isotopes/ tracers in nutritional studies. Metaloenzymes, antioxidants and their relationship with aging, cancer and other metabolic disorders. Heavy metal toxicity, trace minerals, their chronology, chemistry, distribution, functions, absorption, metabolism, requirements, deficiency manifestation and interaction.
- FN 604 Food Systems and Community Nutrition** **2+0** **Sem I**  
 Food situation in India and in the world. Food systems and their indicators. Food production and consumption trends in India and in the world. Factors affecting food distribution at macro and micro level. Per capita food availability and consumption. Food and Nutrition security at national and household level. Role of agriculture in enhancing food security. Food safety. Nutrition surveillance. National nutrition policy and intervention programmes. Role of Information Communication Technologies (ICT) in nutrition and content of nutrition education for various groups.
- FN 605 Nutrition in Emergencies** **2+0** **Sem II**  
 Starvation in emergencies arising out of drought, floods, earth quakes, locust, war, wrong policies and poverty, historical perspectives. Effect of inanition, short, medium and long term emergencies on food and nutrients intake, precautions against food shortage. Food needs at national level during emergencies. Major nutritional deficiency diseases in emergencies, mobilization of local resources, general fund distribution, mass and supplementary feeding, therapeutic feeding, social funds. Control of communicable diseases, public health and hygiene problems during emergencies.
- FN 606 Global Nutrition Problems** **2+0** **Sem. I**  
 Food consumption pattern of underdeveloped, developing and developed countries. An overview of world nutrition situation and assessment of problems of developing countries in light of prevalence, etiology, indicators and preventive measures. An overview of world nutrition situation and assessment problems of developed countries in light of prevalence, etiology, indicators and preventive measures. Nutrition and health programmes to alleviate malnutrition, role of national and international organizations.
- FN 607 Advances in Maternal and Child Nutrition** **2+0** **Sem I**  
 Current scenario of maternal and child nutrition. Nutritional aspect of embryogenesis, Factors affecting outcome of pregnancy. Physiological changes in body composition and mental development in relation to prenatal and postnatal nutrition. Effect of nutritional status of mother on quantity and quality of breast milk, recent guidelines in infant feeding and complementary feeding. Feeding of premature babies, HIV and breast feeding, drug abuse and breast feeding. Nutritional problems and requirements of preschool and school going children, growth and development of children, growth monitoring using growth charts. Strategies to improve maternal and child health in India, role of BPNI in promotion of breast feeding in India, importance of world breast feeding week. Rehabilitation of malnourished mothers and children. Key findings of National Family Health Survey.
- FN 591 Seminar**
- FN 600 Master's Research**
- FN 700 Ph.D Research**

## NUTRITION AND DIETETICS

### B.Sc. (Hons) Nutrition and Dietetics - 4 year Programme

<b>N Diet. 101/FN 101 Introduction to Foods</b>	<b>2+1</b>	<b>Sem I</b>
<p>Defining terms used in cookery. Food and its functions. Psycho cultural aspects of foods. Food groups and the nutrients contributed by each group to the diet. Concept and components of balanced diet. Composition and nutritive value of cereals, pulses, dairy products, meat, fish and poultry, vegetables, fruits, fats and oils, sugar and jaggery and spices and condiments. Scientific principles related to foods and their preparation with emphasis on nutritional concepts. Purposes and methods of cooking and their effect on the appearance, nutrients and taste.</p> <p>Practical - Orientation to foods. Working instructions in cooking laboratory. Equipment, tools, weights and measures used in the kitchen. Market survey of raw foods. Preparation of spices, their combination and mixtures. Preparation of dishes and beverages using cereals, pulses, fruits, vegetables, milk and milk products, egg, fish and meat. Use of leftover foods.</p>		
<b>N Diet. 102/FN 102 Fundamentals of Nutrition</b>	<b>3+0</b>	<b>Sem I/II</b>
<p>Introduction and overview of basic principles of nutrition. Definition of terms used therein. Interrelationship of health with nutrition. Recommended Dietary Allowances for Indians and factors affecting these viz age, sex, physical activity and physiological state. Classification, functions, sources, digestion, absorption and effects of deficiency/ excess of carbohydrates, fats and proteins on human health. Classification, functions, sources, deficiencies and toxicities of fat soluble vitamins - ADEK and water soluble vitamins - B-complex (Thiamine, Riboflavin, Niacin, Pantothenic acid, Folic acid and B12) and vitamin C. Classification, functions, sources, absorption and effects of deficiencies/excess of minerals - calcium, phosphorus, iron, iodine, fluorine, magnesium. Importance of water in nutrition.</p>		
<b>N Diet. 103/FN 303 Food Hygiene and Sanitation</b>	<b>2+1</b>	<b>Sem I/II</b>
<p>Concept, significance and interrelationship of health, hygiene and sanitation. Characteristics of good health and factors affecting it. Inculcating hygienic habits to promote health. Kitchen hygiene and sanitation. Sources of water contamination and its purification at domestic level. Causes of air pollution and its ill effects on health. Causes, symptoms and control of food borne diseases - diarrhoea, dysentery, cholera, typhoid, jaundice. Soil impurities, their effect on health and its prevention and control. Accidental and bacterial food poisoning. Symptoms and prevention of food poisoning. Municipal health services and mobile units. Prevention and control of infectious diseases. Notification, quarantine, segregation and disinfection. Health service at fairs and festivals. Removal and disposal of refuse and excreta. Sanitary drainage fittings.</p> <p>Practical - Personal and environmental hygiene. Preparation of oral rehydration solution (ORS). Chlorination of water. Control of infestation - rodent control, proofing and destruction of rats, mice etc. Visit to primary health centre and civil hospital. Organization of health and hygiene camp.</p>		
<b>N Diet. 104 Applied Bakery</b>	<b>0+2</b>	<b>Sem I</b>
<p>Terms and techniques used in bakery. Selection, properties and functions of various ingredients - flour, fat, sugar, eggs, salt, milk, yeast, baking powder used in bakery and confectionery. Role of gluten and starch in bakery products. Rheological properties of doughs and batters. Emulsifiers used in bakery. Balancing the formula for bakery products. Preparation of supplemented and therapeutic baked products - cakes, biscuits, cookies, bread and desserts. Icing and cake decoration.</p>		
<b>N Diet. 105/FN 201 Home Scale Food Preservation and Storage</b>	<b>1+2</b>	<b>Sem II/III</b>
<p>Scope of food preservation and storage. Classification of foods on the basis of shelf life. Food spoilage - causes and effects. Principles and methods of food preservation - drying and dehydration, use of high and low temperature, foods as preservatives, use of chemicals, radiation and combination of above methods. Storage of common perishable, semi-perishable and non-perishable foods. Selection and purchase of</p>		

foods for preservation. Food standards and quality control. Packaging and packing materials, labelling and costing of products. Food additives, preservatives, anti-oxidants, colouring matter and emulsifying agents. Practical - Availability of preserved foods in the market. Drying of blanched and unblanched fruits and vegetables by solar, sun and oven drying methods. Domestic preservation of foods by freezing. Preparation and storage of squashes and syrups, cordials, jam, jellies, marmalades, preserves, ketchup/ sauces, chutneys, pickles with and without oil. Preparation of items utilizing cereals and legumes and their storage. Preparation of sugar candies. Demonstration of canning and bottling of fruits and vegetables. Demonstration on storage of food grains in rural and urban situations on small scale.

**N Diet. 106/FN 202 Community Nutrition** **2+1 Sem I/II**

Concept of community, health, malnutrition, maternal and infant mortality, morbidity, nutritional status. Assessment of nutritional status using dietary survey, anthropometry, clinical symptoms and biochemical methods. Major nutritional problems prevalent in India and Punjab - Protein energy malnutrition, iron deficiency anaemia, vitamin A deficiency, iodine deficiency disorder and fluorosis. Role of community kitchens in combating malnutrition. National nutrition programmes and policies. Global nutrition, role of national and international agencies in improving nutritional status of the community. Concept of food adulteration, common adulterants, their health hazards, prevention and control. Principles, methods and evaluation of nutrition education programmes. Nutrition surveillance.

Practical - Assessment of nutritional status of an individual/community using anthropometry, dietary survey and clinical signs and symptoms. Visit to an Integrated Child Development Services Block and Primary Health Centre. Development of audio visual aids for imparting nutrition education. Planning, implementation and evaluation of nutrition education for specific target groups.

**N Diet. 201/FN 301 Normal and Therapeutic Nutrition** **2+1 Sem I**

Importance of meal planning and factors to be considered while planning meals. Use of food groups and exchange list, calorie consumption units in planning meals for a family. Physiological changes and nutritional requirements during pregnancy and lactation. Growth, development and nutritional requirements during infancy. Breast feeding v/s bottle feeding and complementary feeding. Growth, development, food habits and nutritional requirements of pre-schoolers, school going children and adolescents. Physiological changes occurring during old age and meeting their nutritional requirements. Modification of normal diet to therapeutic diets and its importance.

Practical - Planning and preparation of balanced diet for adults, preschool and school going children, adolescents and old age. Planning and preparation of diets for pregnant and lactating women. Preparation of infant formula and complementary foods. Planning and preparation of diets for special occasions - birthdays and festivals. Packed lunches. Planning and preparation of diets during selected disorders - typhoid, diarrhoea, constipation, hypertension, diabetes, under weight and over weight.

**N Diet. 202/FN 302 Nutrition for Special Groups** **3+0 Sem I**

An overview of groups with special nutritional needs. Relationship of nutrition with health of an individual with special needs. Traditional dietary habits and food restrictions of minority ethnic communities. Trends in vegetarianism. Nutrition for population below poverty line, refugees, asylum seekers, homeless people in orphanages and senior citizen homes. Meeting nutritional requirements during famines, floods and other natural calamities. Current nutrition and health status of women and children in India. Dietary management of industrial workers, sports persons, astronauts and defense personnel. Nutrition intervention to promote health

**N Diet. 203 Human Nutrition** **3+1 Sem I**

History of nutrition. Body composition. Energy - units, sources and requirements. Fuel value of food and methods of measuring it. Physical activity, energy expenditure and thermogenic effect of food. Basal metabolic rate, methods of its measurement and factors affecting it. Types, functions, sources and requirements of carbohydrates, proteins and lipids. Digestion, absorption and metabolism of carbohydrates, proteins and lipids and their role in health and disease. Significance of dietary fibre. Evaluation of protein quality, mutual supplementation and protein energy malnutrition. Classification, functions, sources, requirement, deficiency and toxicity of fat soluble vitamins A, D, E, K and water soluble vitamins B complex and C. Minerals - classification, functions, sources, requirements, deficiency and toxicity of

calcium, phosphorus, iodine, fluorine, iron, sodium, potassium, chloride, copper and zinc. Factors affecting bio availability of calcium and iron. Electrolyte balance. Water : Functions, sources, distribution in body and water balance.

Practical - Demonstration on bomb calorimeter. Assessment of energy intake and energy expenditure for 3 days. Calculation of energy balance. Calculation of ratio of saturated and unsaturated fatty acid, n3 and n6 poly unsaturated fatty acids. Simple techniques to improve bio availability of nutrients - germination, fermentation, mutual supplementation.

**N Diet. 204/FN 305 Institutional Food Service Management** **2+2** **Sem II**

Types of food service institutions. Styles of food services. Planning, writing, types and preparation of menu and menu cards. Menu display. Floor planning and layout. Principles, functions and tools of management. Personnel management - selection and training, desirable qualities and responsibilities. Employee's facilities and benefits. Selection, purchase and storage of food. Financial management, cost concept, food cost control, pricing, budget and accounting, systems of book keeping. Selection, purchase, installation, operation, care and maintenance of equipment. Hygiene in food handling and personal hygiene.

Practical - Standardization of recipes of snacks and a meal for portion and cost. Development of recipe book. Preparation of various types of menu cards. Table setting, tray service of tea and snacks for 25 persons. Running a canteen for one day. Serving high tea to 20 persons and a meal to 10 persons. Preparation and service of packed lunch. Maintenance of accounts and record keeping. Visit to different food service institutions.

**N Diet. 205 Clinical Nutrition** **2+1** **Sem II**

Pathogenesis of deficiency diseases. Etiology, prevalence, clinical signs and symptoms of common deficiency diseases. gastrointestinal disorders - diarrhoea, constipation, peptic ulcer, ulcerative colitis. Etiology, metabolic changes, clinical manifestations, complications and dietary management of liver disorders - hepatitis, cirrhosis, hepatic coma; diabetes mellitus. Etiology, metabolic changes, clinical manifestations, complications and dietary management of cardiovascular diseases, hypertension, atherosclerosis. Etiology, metabolic changes, clinical manifestations, complications and dietary management of renal disorders - acute and chronic glomerulonephritis, nephrotic syndrome, urinary calculi, renal failure. Diet in cancer and burns.

Practical - Nutritional care and documentation of hospitalized patients. Assessment of clinical symptoms during nutritional deficiency disorders - protein energy malnutrition, iron deficiency anaemia, iodine deficiency disorders, fluorosis and vitamin A deficiency. Biochemical assessment of blood and urine and their interpretation in terms of health and diseases. Nutritional intervention and diet modification during different diseases.

**N Diet. 206 Dietetic Food Development** **0+2** **Sem II**

Awareness about the dietetic foods available in the market. Development of dietetic foods - energy dense, high/low protein, low sodium, low cholesterol, high/low fibre, high complex carbohydrates, low calorie and low sodium, low protein and low fluid, high fibre and low fat, low fat and low sodium, low sodium and low protein and other combinations. Sensory evaluation of the developed dietetic foods. Costing and cost control. Packaging - suitability of different packaging material, labeling, shelf life and sale of developed dietetic foods.

**N Diet. 207 Drug Nutrient Interaction** **2+0** **Sem II**

Drug interactions: basic concepts. Types and mechanism of various drugs and their interaction with nutrients. Bio pharmaceuticals of orally ingested drugs. Relationship of drug therapy with intake, absorption and utilisation of nutrients. Monitoring nutritional status in drug regimens. Drug induced malnutrition. Nutrients commonly affected by drugs. Physical examination for drug induced malnutrition. Drug related gastrointestinal and metabolic disorders. Obesity and appetite suppressant drugs. Drug induced metabolic alterations in patients receiving parenteral and enteral nutrition. Herbal and dietary supplements and their interaction with drugs. Effect of alcohol consumption on nutrients. Dietary counselling to prevent food drug interactions. Computer applications in management of nutrient drug interaction. Drug nutrient interaction and Joint Commission for Health Care Organizations

- N Diet. 208 Geriatric Nutrition** **2+1** **Sem II**  
 Importance of geriatric nutrition. Physical and physiological changes in ageing. Geriatric food and nutritional requirements. Health and feeding problems among elderly - osteoporosis, obesity, neurological dysfunction, anaemia, malnutrition, acidity, distension and constipation. Nutritional management of degenerative diseases - diabetes, coronary heart disease, cancer and parkinsonism disease. Disability disorders - bone fractures, arthritis and strokes. Nutrition support - parenteral/enteral/ oral. Drug - food and nutrient reaction. Physical exercise for functional independence.  
 Practical - Assessment of nutritional status of elderly population. Meal planning for elderly in normal and disease conditions. Nutrition counselling.
- N Diet. 301/FN 402 Food Science** **2+2** **Sem I**  
 Composition, physical and rheological properties and nutritive value of food stuffs. Sols, gels, foams, emulsions, colloids and their application in food preparation. Effect of pH on foods. Coagulation and denaturation of proteins. Enzymes and their utilisation in foods industry. Enzymatic and non-enzymatic browning reaction. Use of chemical and biological leavening agents in food preparation. Physical, chemical and nutritional changes occurring in foods during processing and storage. Sensory evaluation of food products. Functional foods.  
 Practical - Cooking quality, characteristics and use of cereals (wheat and rice), gluten content of wheat flours in relation to their suitability for the preparation of chapaties, cookies and bread. Vegetable and fruit cookery - effect of different methods of blanching and drying on carrots, green leafy vegetables, cauliflower, peas and potatoes. Principles involved in sugar cookery and its effect on amla, papaya, apple and mango. Preparation of low calorie recipes from milk, curd and cheese. Effect of cooking on egg and meat preparations. Preparation of mayonnaise. Melting and smoking points of fats and fat absorption in different products. Sensory evaluation of recipes prepared from non-conventional and locally available low cost nutritious foods.
- N Diet. 302/FN 403 Food Standards and Quality Control** **2+1** **Sem I**  
 Importance of quality control and assurance. Food laws and regulations - Prevention of Food Adulteration Act, Fruit Product Order, Agmark, Essential Commodity Act and Consumer Protection Act, Bureau of Indian Standard, Codex Standards, Hazard Analysis and Critical Control Point. Sampling procedure. Application of food standards, sampling and specifications for raw foods and food products for additives, preservatives, colouring matters, anti-oxidants, emulsifying and stabilizing agents. Various methods for the assessment of quality of different foods. Selection of sensory panel and sensory evaluation of food products. Grading and marketing standards, specifications of finished products. Assessment and prevention of food adulteration.  
 Practical - Examination of agriculture, horticulture and animal foods and food products in relation to different standards - Prevention of Food Adulteration Act, Food Product Order, Agmark, Bureau of Indian Standards, Codex Standards, Hazard Analysis and Critical Control Point. Visit to quality control laboratory and food processing industries. Market survey of processed foods for quality assurance; development of score cards and evaluation of different foods.
- N Diet. 303/FN 404 Food Toxicology** **2+0** **Sem I**  
 Introduction and significance of food toxicology. Types, causative factors, signs, symptoms and preventive measures of food poisoning. Natural food toxins. Anti-nutritional factors, fungal and seafood toxins, goiterogens and carcinogens, their harmful effects and methods of removal. Concept of microbial toxins and food intoxication, sources of contamination, effect on health, preventive measures and methods of inactivation/ destruction. Chemical toxins - pesticides, metallic and radioactive materials in food, residual effects, preventive measures, methods of removal. Food packaging material and potential contaminants. Hazards of plastic packaging during storage and transportation and their effect on health.
- N Diet. 304/FN 405 Diet Therapy and Nutrition Support** **2+2** **Sem I**  
 Principles of dietetics. Dietician as a part of medical team and outreach services. Structure, administration and functions of dietary department. Food service in hospital. Clinical information, medical history, assessment of patient profile. Methods of dietary assessment. Therapeutic adaptation of normal diet for consistency, temperature, nutrients and amount for febrile diseases, gastric, renal, liver and metabolic

disorders. Dietary modification for obesity, hypertension and heart diseases . Aesthetic attributes of diets.

Practical - Lay out of a dietetics department. Modification and preparation of diets for therapeutic purposes in terms of consistency, nutrients, temperature and quantity. Preparation of list of foods need to be avoided and/or included in different diseases - diabetes, cardiovascular diseases, diarrhoea, constipation, peptic ulcer, jaundice, cirrhosis of liver and kidney diseases. Planning, preparation and serving of diets low/high in energy, fibre, protein, lipids, carbohydrates, sodium, potassium, vitamin A and iron in reference to common diseases. Planning and preparation of diets for patients suffering from more than one disease - kidney, diabetes, Coronary Heart Disease. Visit to dietary department of a hospital. Observation of clinical signs and diet served/consumed by patients.

**N Diet. 305 Diet Counselling** **0+4** **Sem I**

Diet counselling - process and its significance. Assessment of needs of patients. Establishing rapport. Communication process. Patient education. Resistance behaviour and potential strategies to modify them. Case studies- selection of 2-3 patients and recording their clinical, nutritional and biochemical profile, therapeutic modification of diets, diet prescription and report writing. Pre requisites and preparation for setting up a counselling centre. Preparation of computer generated audio-visual aids for diet counselling, charts, posters, flash cards, pamphlets, bulletins. Organizing counselling camps for specific diseases like obesity, diabetes, liver diseases, cardio-vascular diseases, and protein energy malnutrition in college, hostel, hospital, fairs and health club. Physical fitness in relation to chronic diseases.

**N Diet. 306 Applied Community Nutrition** **3+1** **Sem II**

Assessment of nutritional status - anthropometric measurements, dietary surveys, clinical investigation and biochemical assessment. Food production and consumption in relation to population. Materno-foetal nutrition- maternal nutrition, relation between maternal and foetal nutrition, current Maternal Mortality Rate and Infant Mortality Rate. National Food Balance. Balance sheet and food service. Planning, executing, monitoring and evaluation of nutrition programmes. National and international nutrition programmes. Agricultural and nutritional policies of India. Malnutrition and environmental health.

Practical - Planning and conducting nutritional status surveys. Presentation and interpretation of data. Preparation of audio visual aids and imparting nutrition education

**N Diet. 307 Maternal and Infant Nutrition** **2+1** **Sem II**

Importance of maternal and infant nutrition. Physiological and biochemical changes during pregnancy. Nutritional needs of pregnant woman. Maternal nutrition and foetal outcome. Complications of pregnancy and their dietary management. Physiological changes in lactation. Nutritional requirements of lactating mothers. Nutrition during infancy, growth and development of infant. Nutritional needs of infants. Breast feeding, advantages of breast milk and guidelines for breast feeding. Code on breast feeding and marketing of formulae foods. Feeding of premature and immature babies. Artificial feeding, weaning and supplementary feeding. Balanced diet for infants.

Practical - Food consumption survey of pregnant and lactating women. Preparation of infant food formulations. Development of weaning and supplementary foods from locally available, low cost food stuffs.

**N Diet. 308 Sports Nutrition** **3+0** **Sem II**

Concept of sports nutrition. Evolution and growth of sports nutrition as a discipline. Anthropometric and physiological measurements. Nutrition and physical performance. Energy systems - ATP-CP energy system, lactic acid energy system and oxygen energy system. Muscles and physical performance. Energy intake and exercise. Macronutrients and exercise - Carbohydrates, fats and Protein. Vitamins, minerals and athletic performance. Athletes and iron deficiency. Fluid needs during exercise. Nutrition supplements and ergogenic aids. Nutrition for strength training. Nutrition for vegetarian athletes. Amenorrhea in athletes - role of diet.

**N Diet. 401 Traditional Indian Food Products** **0+2** **Sem. I**

Exploring and enlisting traditional recipes of different states of the country - Punjab, Haryana, Himachal Pradesh, Jammu and Kashmir, Gujarat, Uttar Pradesh, Madhya Pradesh, Maharashtra, Rajasthan, Andhra Pradesh, Karnataka, Tamil Nadu, West Bengal. Standardization of common recipes of North, East, South,

West and Central Zones of country. Preparation of meals of different above mentioned zones of the country. Value addition of traditional recipes and meals by incorporating green leafy vegetables, soyabean, flaxseeds, carrots, papaya, tomatoes, amla and guava. Nutrient composition of traditional v/s value added meals/recipes - panjiri, pinni, mathi, shakarpara, namakpare, khichri, dalia, missi roti, biscuits, halwa,

**N Diet. 402 Nutrition and Immunity** **3+0** **Sem I**

Immune systems - the defence mechanisms of the body. Role of nutrients in immune functions. Undernutrition, host defense mechanisms and risk of infection. Infections and undernutrition - causes and consequences. Influence of infections on nutrition and susceptibility to infection. Role of nutrients in prevention of risk of infections. Childhood mortality associated with infectious diseases of gastro-intestinal tract and lungs. Age related immune depression. Role of nutraceuticals and functional foods. Nutrition, HIV/AIDS and Tuberculosis. Probiotics, prebiotics and immunity. Food allergy.

**N Diet. 403 Computer Application in Human Nutrition** **1+3** **Sem I**

Basic components related to computer software. Use of data analysis tools using spread sheets. Introduction to different types of nutrition computer programs pertaining to nutrient analysis, food service and recipe management, menu planning, clinical nutrition, drug-nutrient interactions, health risk assessment, lifestyle prescription and nutrition education. Nutrition on web related to recent researches on food and nutrition.

Practical : Use of general production tools - graphic packages, computer photo and clip art. Computer generated nutrition education. Creating nutrition related newsletters, booklets and other material. Creating educational material. Development of food and nutrition instructional programs designed for different age groups. Conducting a dietary survey/study. Use of nutrient analysis software and computerized food frequency questionnaires. Computation for tabulation and interpretation of data. Using statistical tools for calculation of diets for different age groups for special conditions. Drawing guidelines from the collected information. Use of computers in assessing nutritional status of patients. Computerized medical records, dietary risk factors analysis and preventive care reminders. Introduction to food and nutrition on line services, electronic bulletin board systems, computer conferencing and interactive television.

**N Diet. 404 Nutritional Strategies in ICU** **2+2** **Sem I**

Principles and modes of feeding. Enteral nutrition - methods of enteral feeding. Formulae for enteral feeding. Feeding requirements. Care of solutions. Recording and monitoring. Advantages of tube feeding. Parenteral nutrition - methods of parenteral feeding. Total parenteral nutrition formulae for children and adults. Complications of total parenteral nutrition. Hospital nutrition support service. Pre-operative nutritional assessment. Pre and post-operative diet. Immunonutrition.

Practical - Visit to dietary department of hospital to observe different diet formulae. Visit to ICU of hospital for observing different types of feeds given to patients. Preparation of diets using different formulae.

**N Diet. 405 Seminar** **0+1** **Sem I**

**N Diet. 406 Internship I - In Plant Training** **0+16 NC** **Sem II**

Acquaintance with the working of dietary departments in hospitals. To record the clinical, nutritional and biochemical profile of the patients and modification of diets accordingly. Prescription of therapeutic diets.

**N Diet. 407 Internship II - Case Studies - Report Writing and Presentation** **0+6** **Sem II**

Case studies of patients suffering from different diseases. Development of entrepreneurial and managerial skills. Preparation of project proposal for establishing diet counselling cell including resource mobilisation, finance, raw material, site and manpower. Report writing and presentation.

## FAMILY RESOURCE MANAGEMENT

### PROGRAMMES

1. B.Sc. (Hons) Interior Design

2. M.Sc.

3. Ph.D

### COURSE REQUIREMENTS

#### M.Sc.

Field of specialization Ergonomics, Resource Management

Required courses FRM 501, FRM 502, FRM 503, FRM 504, FRM 505

Supporting courses Stat. 421, PGS 501 and other courses from subject matter fields (other than Minor) relating to area of special interest and research problem.

Minor field Business Management, Apparel and Textile Science, Economics, Sociology, Home Science Extension and Communication Management, Food and Nutrition or any other as approved by the Dean Postgraduate Studies.

Deficiency courses for students with elective other than Family Resource Management 9-12 credit hours of atleast 400 series courses as recommended by the Student's Advisory Committee and approved by the Dean, Postgraduate Studies

#### Ph. D

Field of specialization Ergonomics, Resource Management

Required courses FRM 601, FRM 602, FRM 603

Supporting courses Courses from subject matter fields (other than Minor) relating to area of special interest and research problem.

Minor field Business Management, Apparel and Textile Science, Economics, Sociology, Home Science Extension and Communication Management, Food and Nutrition or any other as approved by the Dean Postgraduate Studies.

Deficiency courses for students with M.Sc. (Home Science) in a Discipline other than Family Resource Management. FRM 501, FRM 502, FRM 503, FRM 504, FRM 505 and other courses as recommended by Student's Advisory Committee and approved by the Dean, Postgraduate Studies



## DESCRIPTION OF COURSE CONTENTS

### Undergraduate Courses

- FRM 91 Elementary Environmental Sciences** **2+0** **Sem I**  
Dimensions of environment - physical, biological and social; population and environment. Impact of human activities on environment; natural resources, their depletion and protection. Air, water, soil and noise pollution - sources and consequences. Ozone layer depletion and its effects. Greenhouse effect - global warming and climatic changes and their consequences. Conventional and non conventional energy sources and their conservation. Waste Management.
- FRM 92 Appreciation of Fine Arts and Crafts** **1+1** **Sem II**  
Meaning and origin of arts and crafts. Sources of studying art and craft. Ancient and medieval Indian arts and crafts. Contemporary Indian art. Art in everyday life.  
Practical: Drawing and sketching. Use of different types of colours. Functional and creative use of waste material.
- FRM 101 Management of Family Resources** **2+0** **Sem I**  
Importance and scope of management. Philosophy of life. Different stages of family life cycle. Managerial functions of families. Concepts of management - systems approach to Family Resource Management, values, goals, standards, resources, organization, communication, coordination, direction, leadership and supervision. Process of decision making, types of decisions, steps in decision making and factors affecting decision-making. Steps of management process - planning, controlling and evaluation. Time management - steps, process and tools. Management process applied to energy. Fatigue, measures to relieve fatigue and effective use of body. Concept and techniques of work simplification and classes of change.
- FRM 102 Home Arts and Crafts** **1+2** **Sem I**  
Meaning and types of design. Elements of design - line, form, colour, texture, light, pattern and space. Principles of design - balance, rhythm, harmony, emphasis and proportion. Importance and properties of colour. Colour theories and colour schemes. Effect of colour and its application in interiors. Decorative accessories and use of colour in accessories. Development of design, sources of ideas, choosing a theme and transferring the design.  
Practical: Drawing of colour wheel, developing tints, shades and different colour schemes. Preparation of creative articles- candle making and its decoration. Pot decoration using different techniques - decoupage, mixed media, painting and marbling. Paper creations - greeting cards, envelopes, bags, gift wrapping and paper- mache. Alpana and Rangoli with different materials like saw dust, powdered colours, flower petals, poster colours, rice and pulses. Poster making, cartooning, collage making, clay modeling and sketching. Painting with water colours, oil colours, glass colours, fabric colours and acrylic colours. Arranging exhibition.
- FRM 103 Housing and Space Management** **1+1** **Sem II**  
Housing and its importance. Housing needs in different stages of family life cycle. Selection of site, orientation and zoning. Factors considered while planning a house. Building bye-laws. Building materials. Economy in constructing a house. Buying/building a house. Government/ semi government housing. Housing finance. Space requirements and storage provisions in different rooms. Home lighting. Concept and design of Modular kitchen.  
Practical: Learning architectural symbols. Drawing of different room plans with furniture arrangement and space allowances. Drawing of simple house plans with lighting and fitments. Renovation of house plans according to needs of residents. Identification of different building materials.
- FRM 201 Fundamentals of Art and Interior Enrichment** **1+1** **Sem I**  
Importance and objectives of Interior Enrichment. Types, selection, arrangement and care of furniture. Space saving furniture. Types, selection, care and maintenance of floor and floor coverings. Factors affecting

selection of wall treatments and their care. Types of windows and window treatments. Factors affecting selection of window treatments. Selection of plant material for flower arrangement. Types and styles of flower arrangements. Selection and placement of accessories. Table setting and table etiquettes.

Practical: Arrangement of furniture for different rooms. Care of different types of furniture and furnishings. Mounting of pictures and wall hangings. Placement of accessories for interior enrichment. Table setting and etiquettes. Preparation of different styles of flower arrangements.

### **FRM 202 Household Equipment**

**1+2**

**Sem II**

Introduction of equipment in home. Materials used for household equipment - base materials, finishes and insulating materials. Basic manufacturing processes - methods of forming and assembling utensils. Factors affecting selection of equipment. Drudgery reducing equipment. Electrical and non-electrical equipment. Selection, use, care and maintenance of household equipment. Conventional and non-conventional energy sources. Equipment design and its effect on body postures.

Practical: Identification of base materials and finishes used in household equipment through laboratory equipment and market survey. Use, care and maintenance of electrical and non-electrical equipment related to cooking, cleaning, laundry, cooling and dish-washing. Fuse replacement and making electrical connections. Demonstration on use of low cost solar household equipment - solar cooker and solar dryer. Demonstration on use of smokeless chulha. Visit to biogas plant.

### **FRM 301 Family Economics and Consumer Education**

**2+1**

**Sem I**

Scope of family economics and consumer education. Factors affecting family income and expenditure. Management process applied to money - types and sources of income, income profiles and methods of handling income. Budgeting - steps in making budget, controlling and evaluating budget. Account and record keeping. Engel's law of consumption. Credit - need, types, sources, use and credit instruments. Planning for family's financial security - savings, investments, taxation and will. Consumerism - meaning and its growth. Consumer rights, responsibilities and consumer problems. Unfair trade practices. Sources of consumer information - advertisements, labels, packages etc. Consumer protection and welfare. Consumer protection laws.

Practical: Making personal and family budget. Family financial record keeping. Bank withdrawals, deposits, drafts etc. Visit to post office, banks and insurance institutions. Calculation of credit costs and taxes. Adulteration detection. Critical analysis of labels of consumer products, standardized marks, weights and measures etc. Celebration of Consumer day.

### **FRM 302/ID 211 Furniture Design and Arrangement**

**2+1**

**Sem II**

Furniture style in different periods. Materials used for furniture fabrication-wood, metal, plastic, glass, wicker, rattan, cane and rush. Upholstered furniture. Quality of construction. Types of furniture and their selection - tables, desks, seating furniture, sleeping furniture and storage furniture. Furniture arrangement for various rooms and occasions. Cost estimation of furniture for different income groups and areas. Space saving, multipurpose and modular furniture.

Practical: Design evaluation of furniture for various activities. Space saving multipurpose furniture. Arrangement of furniture for various occasions and different income groups on scale drawing. Market survey for latest trends in furniture design. Sketch drawing of furniture items for different users. Care of different types of furniture.

### **FRM 303/ID 214 Floor and Floor Coverings**

**2+1**

**Sem II**

(In collaboration with Department of Civil Engineering)

Definition, importance, types and ergonomic considerations. Selection of hard floor materials - brick, concrete, stone, tile, terrazzo and wood. Selection of resilient floor materials - asphalt tiles, linoleum, cork, rubber and vinyl. Soft floor coverings. Types, care and maintenance of floor and floor treatments. Types, selection, installation methods, care and maintenance of carpets and rugs. Indoor and outdoor carpeting. Use and importance of floor coverings in interior decoration. Floor decoration. Storage of floor coverings, pretreatment and storage techniques. Eco-friendly flooring.

Practical: Market survey for various types of floor materials and floor coverings, their installation and cost estimation. Project work on traditional and contemporary floor treatments. Floor decoration. Care of floor

coverings. Eco friendly cleaning techniques for floors and floor coverings. Project work on low cost floor materials.

**FRM 304 Walls and Window Treatments** **2+1** **Sem II**

Wall elements. Exterior and interior wall materials. Non-resilient (rigid) and resilient (flexible) wall coverings. Finishes and surfacing - wall paper, paints, wood paneling, laminator, ceramic tiles, linoleum and fabrics, their care and maintenance. Types and styles of wall elements - windows, doors, ventilators and fire places. Types of windows and window terminology. Types of window treatments. Selecting a hanging system for curtains - rods and poles, rings and finials. Factors influencing choice of window treatments.

Practical: Study of latest wall finishes and methods of use. Market survey for various types of curtain materials and hanging systems and their cost. Planning window dressings for different types of windows, problem windows and their treatment. Elements and principles of design in windows. Wall and window treatments for congenial environment.

**FRM 305/ID 212 Floral Creations** **1+3** **Sem. II**

Use of basic tools, equipment and containers for flower arrangement. Materials used, selection, cutting and storage of flowers. Prolonging life of cut flowers. Principles, designs and types of flower arrangements. Procedure for making flower arrangements. Application of colour in flower arrangements. Identification and characteristics of seasonal flowers. Identification and maintenance of potted plants.

Practical: Preparation and maintenance of Bonsai. Collection of flowers, storage and arrangement. Selection and preparation of plant materials. Care of flowers and foliage. Preparation of different styles and types of flower arrangements. Flower arrangements for different rooms and occasions. Preparation of permanent arrangements. Drying and preservation of flowers and foliage using different techniques. Preparation of utility and decorative articles from dried flowers and foliage. Preparation of bouquets, garlands and jewellery. Arranging exhibition.

**FRM 306/ID 204 Interior Design Drawings** **1+3** **Sem II**

Drawing equipment. Introduction to scale and measurement. Types of designs and sources, design process and phases of design process. The theory of projections. Different rendering techniques and symbols used in architectural drawings.

Practical: Concept development including ideation, schematics and concept statements. Design drawings including plans, sections, elevations and details. Different projections and views - perspective drawings (one point, two point), orthographic projections (parallel projection) and views. Isometric projections and views. Axonometric views. Oblique projections. Perspective drawings. Drawing isometric views from orthographic projections. Drawing of doors, wall units and windows.

**FRM 401 Traditional and Contemporary Interiors** **3+0** **Sem I**

Historic overview of interior design. Trends in the nineteenth century - Arts and Crafts movement and Art Nouveau. Design for the Machine Age, Modern Design and Post-Modern Design. Concept of Interior decoration in India. Trends of Interior Decoration in India- Interiors of Golden Age, Interior Décor in Medieval India, The Western Interlude, The Indian Renaissance, Contemporary Indian Décor and Eclectic Decoration. Vastu Shastra and Feng Shui interiors. History of interior decoration. Architecture and decorative art. Period art in interior decoration. Changing ideas of homes in India - style, period, characteristics and adaptation of design in interiors. Traditional and modern handicrafts of India. Adventure in colour.

**FRM 402 Computer Aided Interior Designing** **0+4** **Sem I**

Preparation of room plans and room layouts on computer. Furniture arrangement in various rooms with the help of software packages. Preparation of house plans/layouts for one bedroom house, two bedroom house, three bedroom house and also for various plot sizes. Colour schemes for different rooms. Placement and arrangement of wall hangings and other accessories. Creating front elevations and different views. Preparing lighting plans for different rooms. Designing and cost estimation of material for furniture, upholstery and draperies. Cost estimation for various building materials.

**FRM 403/ID 408 Accessories for Interior Enrichment** **1+2** **Sem I**

Importance of accessories in interiors. Functional and decorative accessories. Selection and placement of accessories in different parts of the interiors. Various types of accessories used in homes - mirrors,

books, murals, clocks, screens, cushions and hassocks, mats, lamps, artifacts, antiques, baskets, glassware, chinaware, house plants, pictures and wall hangings. Planning a wall grouping. Three dimensional accessories for special effects. Lighting as an accessory. Buying guidelines for accessories. Guidelines for arrangement of accessories in interiors.

Practical: Market survey on latest trends in accessories. Preparation of any ten accessories like candles, pots, wall hangings, glass painting, mixed media wall hanging, lamp shades and decoupage articles. Organizing an exhibition on accessories.

**FRM 404 Residential Space Designing** **0+2** **Sem I**

Plans of various residential buildings - single storey, multi storey, bungalow, duplex, detached and semi detached. Planning various spaces - drawing room, dining room, lobby, bedroom, storage, kitchen, toilet, dressing and pooja room. Ergonomic designing of storage and cabinets. Elevations of residential buildings. Visits to residential building sites.

**FRM 405/ID 304 Functional Interiors for Special Needs** **1+1** **Sem I**

Housing environments - interiors based on functional needs. Interiors for children, elderly and people with other special needs - furniture, lighting and indoor climate in different rooms. Planning and designing interiors for children, elderly and people with special needs. Functional interior options for specific purposes and special needs - fitments, space allowances/requirement and special provisions in different rooms.

Practical: Simulating interior environments for specific purposes. Making master plan concepts through drawings of interiors for special needs. Arranging simulated interiors for special needs/ specific purposes like continuing care and nursing care.

**FRM 421 Internship I - Entrepreneurial Placement/ In plant Training** **0+2** **Sem II**

Placement with an entrepreneur for studying the organizational structure, pre production and production processes, quality control, markets and marketing strategies.

**FRM 422 Internship II - Project Report and Presentation** **0+4 NC** **Sem II**

Development of entrepreneurial and managerial skills. Preparation of project proposal for establishment of a small scale unit including resource mobilization, raw material, man power management, advertisement and marketing details. Report writing and presentation.

**FRM 423 Internship III - Experiential Learning in Artistic Creations** **0+8** **Sem II**

Hands-on-training on paraffin wax candles, perfumed candles, bees wax candle, gel candles, paper mache articles, artificial flower making, dry flower arrangements, rakhi making, jewellery box/jewellery designing and paper creations. Practice in gift wrapping, trousseau packing, glass painting and fabric painting. Purchasing raw materials and marketing of finished products.

## Postgraduate Courses

**FRM 501 Approaches to Resource Management** **2+0** **Sem I**

Significance and scope of resource management. The evolving discipline of management - classical approach, behavioural approach, systems approach and scientific management. Managerial decision making - techniques, creativity, rationality and risk and certainty. Theories and concepts in Resource Management. Management process. Planning - types and dimensions, planning in a systems perspective and factors affecting planning. Implementation - controlling and facilitating. Controlling - checking and adjusting. Evaluation and feedback. Leadership- importance and characteristics, behaviour and styles. Motivation - importance, theories, approaches and elements of sound motivation. Organisation, supervision and communication.

**FRM 502 Housing and Interior Space Designing** **3+1** **Sem I**

Historical perspective of the architectural features of buildings. Housing stock quality, demand and supply in urban and rural areas of India. Housing problems. Role of government and non-government organizations in providing and regulating housing needs. Ancient Science of house design. Emerging techniques in the house construction. Low-cost building materials and fabrication techniques. Eco and ergo-friendly house

design. House wiring and sanitary fittings. Rain water harvesting structures for houses. Housing in areas prone to natural disasters - earth quakes, cyclones, floods and fires. Recent developments in building Bye-Laws. Landscape planning. Development of interior design. Effect of interior design and decoration on family well being. Functional and aesthetic considerations in use of elements and principles of design. Human factors and special needs. Designing social zones, work and support areas and private spaces in residential buildings. Trends in decoration treatments for interiors and interior backgrounds from past to present - furniture, furnishings, lighting, fittings and fixtures, surface materials and finishes. Trends in thermal, acoustics and safety mechanisms. Solutions for problem areas in residential and commercial building interiors.

Practical: Evolving eco, ergo and space saving house plans for selected climatic regions for different socio-economic categories through CAD. Estimation of cost of construction. Assessment of existing house plans and suggesting cost effective renovations. Landscape planning. Critical analysis of interiors of selected residential and non-residential buildings. Visits to building design institutes, hotels and furnishing show rooms and residential buildings to identify new trends. Market survey of surface materials, finishes, fittings and fixtures.

**FRM 503 Empowerment of Families as Consumers** **2+0** **Sem I**

Concept of consumer economics - definition of basic concepts. Role and importance of consumer in economy. Profile of Indian families as consuming units. Classification of consumers according to age groups, social class and culture. Consumer wants, consumer choice and factors influencing consumer choice. Consumer in market place. Theories of consumer behaviour, types of buying behaviour, and factors influencing buying behaviour. Consumer economic issues related to services - banking, insurance, health, housing and electricity. Measurement of cost of living. Changes in economy / policies and its impact on family consumption. Saving, investments and taxes.

**FRM 504 Consumer Ergonomics** **2+1** **Sem II**

Significance and scope of ergonomics. Man, Machine and Environment system interactions. Anthropometric measurements and their application in designing household products. Human body in relation to ergonomic study. Fundamentals of work physiology, muscular efforts, energy consumption, body size and movements. Measurement of physical fitness using different techniques. Mechanical parameters. Work postures, postural variations and discomfort. Measurement of physical work capacity and factors affecting energy requirements and costs for various activities. Fatigue. Environmental parameters - measurement, evaluation and effect on worker and work performance. Visual Ergonomics - illusions and accidents. Ergonomic investigations - techniques and problems. Ergonomic requirements for people with special needs.

Practical: Anthropometry and its statistical treatment for design applications. Methodologies for assessment of ergonomic cost of work in terms of physiological indices. Measurement of physical workload. Determination of physical fitness using various techniques. Measurement of posture and postural discomfort using Ergo Software. Measurement of various environmental parameters, evaluation and effect on worker and work performance.

**FRM 505 Energy Conservation in Building Design** **2+1** **Sem II**

(In collaboration with Deptt. of Civil Engineering)

Building as a system for residential and commercial needs. Energy use and crisis. Building design - need and scope for energy use and conservation. Environmental and architectural characteristics and energy consumption. Green building design evaluation system - GRIHA (Green Rating for Integrated Habitat Assessment) and LEED (Leader in Energy and Environmental Design) system. Energy Conservation Building Codes (ECBC) launched by BEE. Green Building Council of India. Factors Influencing building design. Human behaviour in relation to interior and built-in design. Climate and thermal comfort. Design parameters for climate and energy control. Design parameters for visual comfort. Day lighting and artificial lighting. Energy economy. Green strategies. Energy efficient housing options.

Practical: Visits to energy intensive and green buildings. Case studies on selected buildings and design assessment in terms of energy use and conservation. Estimation of energy requirements in buildings. Developing conceptual designs for residential and commercial buildings using green strategies. Calculation of energy costs.

**FRM 506 Furniture Designing and Fabrication** **2+1** **Sem I**

Furniture design in different styles. Historical development of furniture. Furniture for different functions. Furniture decisions. Human factors in furniture design. Latest trends in material, furniture construction, assembling and joinery techniques and craftsmanship. Decorative and protective finishes. Marketing strategies. Functional designing of household furniture based on ergonomics. Recommendations for comfortable furniture used for different purposes - work, rest, relaxation, sleep and for physically handicapped persons. Space saving furniture. Furniture in relation to interior design and architecture. Product cost estimates and marketing strategies.

Practical: Exploring the different types of furniture, material used and fixation methods through literature search and market exposure. Developing designs and schematic drawings of selected furniture. Working out detailed drawings of components and joineries. Building small scale model. Estimating quantity of materials required and cost of construction. Workshop experience in furniture designing and construction. Exposure to furniture care and maintenance.

**FRM 507 Colour and Lighting in Interiors** **2+1** **Sem I**

Fundamentals of colour and light in interior environment. The role of colour in history. Colour systems/theories. Colour - properties, harmony, mixing, schemes and colour interactions. Colour influencing factors. Psychological effects of colour. Visual tricks to play - space making, space shrinking, camouflage and disguise. Use of colour in interiors of residential and non-residential buildings. Physics of light. Natural and artificial lighting. Categories of lighting effects. Lighting economy. Lighting luminaires / fixtures. Lighting different spaces in the interiors. Outdoor and indoor lighting for reassurance and safety. Technical factors - measures of light, control of light, location and direction of light, size and shape of light source, and colour of light. Need for colour and lighting to provide comfort and adequate safety. Need for quality in the selection of colours and lighting in the built environment.

Practical: Evolving Munsell colour wheel. Colour schemes for problem areas in residential and non-residential interiors. Studying the psychological and emotional effects of colours in interiors. Influence of light on colour in simulated conditions. Lighting calculations for interior spaces.

**FRM 508 Consumer Issues and Challenges** **2+1** **Sem I**

Consumer and changing trends. Consumer movement. Profile of consumers in India and Abroad. Public and private sector goods and service providers. Consumer markets - types and features. Market distribution channels. Consumer behaviour. Consumer problems and challenges. Gender issues in consumerism. Impact of media on consumers' purchase behaviour. Multinational trade and consumer welfare in India. Consumer empowerment, Citizens' Charter and Right to information Act.

Practical: Identification of problems of rural and urban consumers. Project work - in-depth study of any one identified problem and finding measures to overcome the problems. Developing consumer education material on selected issues. Impact of print and electronic media on consumers' behaviour. Developing any consumer friendly advertisement for a specific product.

**FRM 509 Consumer Guidance and Counselling** **2+1** **Sem I**

Consumer education. Rights and responsibilities of consumer. Consumer Cooperatives. Consumer Organisations. Role of Voluntary Organizations for consumer protection. Significance of consumer guidance and counselling. Consumer protection measures- legal and non-legal. Consumer Protection Act, 1986. Consumer Legislations. Consumer redressal mechanism. Consumer Protection Councils.

Practical: Visit to local consumer redressal fora. Study of structure and functioning of consumer redressal fora. Understanding the procedure for filing a consumer complaint. Study of the proceedings of consumer court. Visit to local consumer organizations. Study of the procedures in consumer counselling and guidance centre. Mock sessions in handling consumer complaints.

**FRM 510 Work and Workstation Design** **2+1** **Sem I**

Work, worker and workplace interrelationship. Meaning and components of work. Work analysis using different techniques. Components of worker's input. Body Mechanics. Functional design - concept, design and arrangement of different work centers. Procedures for studying workplace design - formal and informal techniques. Workplace design for different postures. Ergonomic factors in design and selection of household

goods, displays and controls. Functional designing of workplace and equipment. Hazards of ill-designed workstations.

Practical: Determining the space relationships as per workers' anthropometry, posture and movement at selected workstations. Recording the anthropometric measurements. Measurement of work costs in terms of physiological indices. Preparing plans of a unit work space. Analyzing a work station. Developing workplace design. Evaluation of existing workstation in a residential and commercial setup.

**FRM 511 Product Design, Testing and Evaluation** **2+1** **Sem I**

Definition, significance and essential factors of product design and consumer product designs. Anthropometry in design. Product services available to consumers. Product safety - hazards and liabilities. Emerging issues in product policy. Quality Control and Standardization for food, textiles, and consumer durables. Product Certification. Need for product testing. Product testing techniques and devices. Product evaluation. Product recall.

Practical: Understanding the selected consumer products through guidelines given by manufacturers. Collecting the standardization norms as per health and safety of workers. Designing the prototype of the developed product by using CAD software. Appraisal on the product testing procedures for processed foods, textiles, electrical and non- electrical equipment. Estimating the device efficiency. Visit to quality control laboratories.

**FRM 601 Management of Family Environment** **2+0** **Sem II**

Concept of environment and its significance in the rural and urban family. Components of family environment- micro and macro environment. Impact of environment on the family resources with respect to socio-economic levels. Measures for improving the quality of life in rural and urban households. Role of government and non-government organizations and mass media in welfare of families and environmental protection. Environment and future of man kind. Technological progress and quality of life.

**FRM 602 Occupational Biomechanics** **2+1** **Sem II**

Importance of human machine system in fitting the task to human. Biomechanics as an area of study. Application of biomechanics to movement - qualitative and quantitative approach. Biomechanical oriented ergonomics in different occupations. Relationships of occupations. Occupational stress - causes, measurements and remedies. Ergonomic task analysis and risk assessment at work places. Tools and techniques to assess and control ergonomic hazards at work places. Occupational safety and health. Application of biomechanics for occupational safety - accident protection and release of stress. CAD system in occupational designs.

Practical: Study of Occupational environment and Occupational stress in selected occupations. Work task analysis using appropriate software. Analysis of the biomechanics applied in work performance using ergonomic check list. Identification of accident prone and stressful occupations. Suggesting remedial performance techniques.

**FRM 603 Globalization and Consumer Economics** **2+0** **Sem I**

The ontology of consumer economics - perspectives and viewpoints. Marketing and customer behaviour - Human behaviour v/s Product behaviour. Model of consumer motivation and behaviour. Individual predisposition in marketing. Group influences in marketing. Consumer decision processes. Aggregate consumer behaviour over time. Diffusion of innovations. Brand loyalty. Globalization, Liberalization and Privatization - impact on consumer behaviour. The W.T.O - The issues for consumers. Codex Alimentarius Commission and its implications for consumers. The Services - consumer perspective and implications. Government programmes/Schemes designed to increase family financial security, increase family food security and generate consumer awareness. Consumer Protection. Managerial and Research implications of consumer issues.

**FRM 604 Family Dynamics and Women Power** **2+0** **Sem I**

Role analysis of Indian home makers from ancient time to modern time. Impact of change in the role of women on the family system. Family dynamics - Theoretical and Conceptual framework to study. Human rights, institutional norms of family, family structure, family ecology and family life development programmes. Economic and psychological cost of gainful employment of women in the family. Stress in the family -

characteristics, category, consequences and need for stress management. Family and social support systems for facilitating women's work participation in different categories of labour - family labour and hired labour. Need for wage policy and relationship between wages and employment. Gender discrimination in wages. Women and law of inheritance and ownership of land. Women in occupational sectors. Occupational hazards of women at work.

**FRM 605 Consumer Product Design** **2+1** **Sem I**

Significance of product design and need for creative approach. Socio-technical and ergonomic factors in design of products. Anthropometric, ergonomic, psychological, and physiological considerations in design making. Involvement of legal factors, engineering ethics and society in consumer product design. Design models. Principles in design for manufacturability. Design analysis and implementation. Design production systems - modular design, design economics, cost analysis, cost reduction and value analysis techniques. Practical: Analyzing the user's option on the design of a specific consumer product. Collection and reporting of standards for selected consumer products as per safety regulations. Conceptualizing and developing design concept. Evolving prototype of the product. Evaluation of the product and documentation.

**FRM 606 Environmental Issues and Challenges** **2+0** **Sem II**

Introduction to technology and environment. State of India's environment. Environmental issues in India - water pollution, air pollution, noise pollution, land pollution and conservation. Global warming in India. Sustainable development - an international perspective. Global environmental issues. Carbon credit and its impact on growth of industries. Carbon foot prints - calculation, reduction and offsetting. Environmental education. Environmental Management System. Population and community ecology. Natural resource conservation and management. Environmental protection and law. Environmental impact assessment. Environmental audit. national and international efforts in improving environmental quality. Research methodology and system analysis applicable to environmental studies.

**FRM 607 Managerial Dimensions for Special Groups** **2+1** **Sem II**

Characteristics and status of people with special needs and mentally challenged children and elderly. Theoretical perspective on efficiency, comfort and safety. Physical environment and architectural dimensions - flooring, stairs, storage, workstations, furniture, equipment, fixtures and fitments. Indoor environment - light, noise, humidity and temperature. Managerial dimensions - time, energy, food and health and psycho-social. External environment support.

Practical: Appraisal of needs and coping strategies adopted by people with special needs at various levels through case studies. Presentation of reports. Inventory of external facilitators and services available as management catalysts. Developing conceptual management models. Planning simulated environments for comfortable living. Analysis of service centres catering to people with special needs and presenting report.

**FRM 591 Seminar**

**FRM 600 Master's Research**

**FRM 700 Ph.D Research**



## INTERIOR DESIGN

### B.Sc. (Hons) Interior Design - 4 Year Programme

<b>ID 101 History of Interior Design</b>	<b>2+0</b>	<b>Sem I</b>
<p>Pre historic interiors. First permanent settlements. An understanding of interiors, detailed study of architectural buildings, constructional technology and materials used, secular interiors, furniture and other interior furnishings and spatial understanding and detailing during classic civilizations and early Christian to Baroque with focus on aspects of interior design. History of architecture in early Hindu, Buddhist and Jain designs. Islamic architecture in India: study of various building typologies, building elements and methods of construction. Development of Colonial architecture in India. Merging of local architecture with various Colonial styles. Architecture after the industrial revolution, transitional period, development of skyscrapers; the modern architecture movement. Overview of post- independence architecture in India. Emergence of modernism, art decoration, industrial and residential designs. Contemporary interiors.</p>		
<b>ID 102 Elements of Design</b>	<b>2+1</b>	<b>Sem I</b>
<p>Elements of art: Importance in interior design. Line: types, line directions, quality, value, contour and gestures. Shape/volume: types, volume/mass, form- types, abstraction, naturalism, idealism. Texture - types, colour: characteristics, properties, colour mixing, colour harmonies, colour discord, colour vs. value, emphasis, space. Space: types, illusion of space, devices to show depth, prospective, forms of space. Pattern- types, light: systems, types. Principles of design: Harmony/Unity: ways to achieve harmony, unity and variety. Emphasis: types, levels, ways to achieve emphasis, Balance: types, ways to achieve balance. Scale/Proportion - Golden Ratio, Rhythm- ways to achieve rhythm. Principles of visual perception; principles of composition. Application of these principles in the process of design. Impact within a designed space.</p> <p>Practical: Creating different types of lines. Creating lines showing different characteristics. Creating different shapes - geometric and organic. Showing negative and positive shapes through drawings. Creating different types of textures on paper. Drawing a colour wheel showing primary, secondary and tertiary colours. Creating value scale. Drawing pictures to show creation of emphasis through different methods - contrast, isolation, placement. Creating different types of balance. Show golden ratio. Creating rhythm through different elements.</p>		
<b>ID 103 Basics of Drawings and Graphics</b>	<b>1+2</b>	<b>Sem. I</b>
<p>Drawing tools and types. Tracing and reproduction of drawings. Line drawing- pencil drawing, geometrical drawing, copying, enlargement and reduction of drawings. Lettering techniques. Projections types- orthographic, axonometric, isometric, perspective etc. Types of designs and sources. Computer graphics and design. Types of free hand drawing.</p> <p>Practical: Designer symbols: architectural symbols, electrical symbols, furniture symbols. Design drawings including plans, sections, elevations and details. Drawing of doors, wall units and windows. Different projections and views- perspective drawings (one point, two point), Orthographic projection (Parallel projection) and views. Isometric projections and views. Axonometric views. Oblique projections. Perspective drawings.</p>		
<b>ID 104 Soft Furnishings for Interiors</b>	<b>3+0</b>	<b>Sem. I</b>
<p>Importance of soft furnishings in interiors. Historical background of soft furnishings. Selecting textiles for interiors - colour and other factors. Fabric constructions -basic sewing kit, construction techniques, finishing, colour, printing. Specialized forms of textiles - embroidery, quilting, tufting, coating etc. selection criteria for soft and hard window dressings, and window accessories. Different soft furnishings for interiors: bed spreads, bed linens, sheets, slip covers, pillow cases, comforter covers, cushion covers, table linen, lamp shades,</p>		

carpet, rugs, etc. Simple upholstery- fit covers, slip covers. Decorating tool kit. Types of decorative fabrics - sheers, light weight, medium weight and heavy weight and their common uses. Factors affecting selection of soft furnishings for interiors. Use of pattern, texture and colour when combining fabrics. Solving design problems with fabric. Caring for soft furnishings.

**ID 105 Elements of Building Services** **2+1** **Sem. I**

(In collaboration with Department of Civil Engineering)

Meaning, definition and importance of building services. Various types of building services. Requirement of services in different types of buildings. Water supply services for residential and non residential buildings. Systems for safe water disposal in residential and non residential buildings. Important considerations for fire protection. General measures for fire safety in buildings. Earthing and its importance. Plumbing services. Planning of plumbing system. Essentials of termite proofing. Domestic water supply system. Cold and hot water supply for multistoried buildings. Sanitation: refuse types, collection and disposal. Basic principles of sanitation, disposal of waste water from buildings. Rain water harvesting. Waste disposal systems for rural areas.

Practical: Market survey and collection of fire resisting materials. Study of termite proofing methods. Visit to rain water harvesting units. Exposure visit to know the latest techniques for dampness and termite control. Identification of various materials used for effective plumbing. Estimation of the requirements for water supply and disposal in residential and non residential buildings. Study of methods for various types of waste disposal, Preparation of models for solid, liquid and waste disposal.

**ID 111 Building Materials and Construction Practices** **2+1** **Sem. II**

(In collaboration with Department of Civil Engineering)

Introduction to building materials. Meaning and significance of building materials. Study of basic building materials. Bricks - broad classification, characteristics of good bricks, brick sizes, types of bonds, jointing and pointing. Stones - uses, classification, general characteristics, properties of building stones namely granite, marble, sand stone, slate etc. Cement types, storage and packing. Concrete - Grades of concrete, Workability and Strength of concrete, Grades of steel, Introduction to R.C.C. Timber - advantages, uses, types of wood, defects in timber, market forms of timber, advantages of plywood, fibre board. Properties of some important woods. Paints - characteristics, constituents, types, method of painting, defects in painting, failure of paint. Varnish - properties of good varnish, constituents, process of varnishing, types.

Practical: Collection of samples and pictures of different building materials. Preparation of drawings for different thickness of wall of English bond and Flemish bond. Visits to construction sites of residential buildings. Visit to institutes. Visit to companies.

**ID 112 Walls and Ceilings** **2+1** **Sem. II**

Wall types. Wall elements - windows, doors, ventilators, stairs, fire places and pillars. Exterior and interior wall finish materials; bricks, concrete, concrete blocks, glass, metal, plaster, stone, tiles, wood, murals and Gypsum wallboard; their use, advantages, disadvantages, care and maintenance. Non-resilient wall finishes - different types of paints and their care and maintenance. Different painting techniques used for wall treatments. Finishes and surfacing/ Wall coverings - different types of wall papers, wall stickers; their advantages, disadvantages, care and maintenance. Ceilings; types, design, heat resistant, false ceiling etc. Factors influencing choice of wall and ceiling treatments. Solution for wall and ceiling related problems of interiors with the application of art elements and design principles.

Practical: Study of latest wall finishes and methods of use. Market survey for various types of wall and ceiling finishes and their cost. Wall and ceiling treatment for congenial environment. Preparation of stickers, stencils.

**ID 113 Interior Landscaping** **2+0** **Sem. II**

Introduction to interior landscaping. The need for plants. History and origin of interior landscaping. Major determinants for plant growth and development - light, temperature, relative humidity and the atmosphere. Selection of planters. Materials for containers - wood, clay and nonporous planters. Decorative planters, hanging planters, home built planters. The growing medium for indoor plants. Planting, repotting and nutrition. Moisture - functions of water, watering quality, methods of applying water. Problems with indoor

plants- diagnosis, pests, diseases, cultural and environmental problems. Placement of indoor plants - window garden, window boxes, table gardens and miniature landscapes, terrariums, bowl and dish garden, bottle gardens. Bonsai making. Popular indoor plants.

**ID 114 Arts and Crafts** **0+2** **Sem. II**

Preparation of creative articles- candle making and its decoration. Pot decoration using different techniques- decoupage, mixed media, painting and marbling. Paper creations - greeting cards, envelopes, bags, gift wrapping, quilling, photo frames and paper machi?. Alpana and Rangoli with different materials like saw dust, powdered colours, flower petals, poster colours, rice and pulses. Poster making, cartooning, collage making, clay modeling and sketching. Painting with water colours, oil colours, glass colours, murals, fabric colours and acrylic colours. Arranging exhibition.

**ID 115 Colour and its Application in Interiors** **2+1** **Sem. II**

Fundamentals of colour and light in interior environment. The role of colour in history. Colour schemes, theories, properties, harmony, mixing and colour interactions. Colour influencing factors. Psychological effects of colour. Visual tricks to play - space making, space shrinking, camouflage and disguise. Special colour effects - effects of texture, pattern and metallic materials. Colour in relation to each other. Use of colour in interiors of residential and non-residential buildings.

Practical: Evolving Munsell colour wheel. Developing various colour schemes for the residential and non residential interiors. Collecting colour samples and using coloured paper samples for preparing colour schemes on paper. Using actual materials for developing colour schemes for interiors. Colour schemes for problem areas in residential and non-residential interiors. Studying the psychological and emotional effects of colours in interiors.

**ID 116 Introduction to Interior Spaces** **3+0** **Sem. II**

Building systems and their relationship to interior environment and user needs. Analysis of various factors which define quality in interior space and the elements which make up the interiors. Importance and scope of analyzing interior spaces. Types of residential interior spaces: private, public / social and work and support areas, Open spaces. Social zone: activities and spaces- greeting guests, conversation, reading, quiet games, audio visual entertainment, active indoor entertainment, outdoor entertainment, children's activities, formal dining; planning social spaces- location, room shapes and sizes. Work and support areas: kitchens- anthropometrics, work centers, storage spaces, designing the kitchen; utility spaces- laundry facility, sewing area, workshop, and general storage. Private spaces: sleeping and dressing- size of sleeping area, number, location and layout of bedrooms, storage, individual needs; bathrooms - location, layout and details; guestrooms; home office and studio space. Fundamental concepts and methods of planning, organization and arranging interior spaces; various aspects and components of interior spaces. Principles of planning interior spaces.

**ID 201 Building Bye Laws and Protection** **3+0** **Sem. I**

Building Bye Laws: Meaning, importance and objectives. Principles underlying Building Bye Laws. Building Bye Laws for residential and non residential areas. Byelaws relating to form, design, external development and landscape, site, height of building, projections and coverage for residential plot. Floor space Index. Open space requirements outside the buildings. Bye laws for habitable and non habitable rooms: size, height, openings, storage, staircase, basement, lighting and ventilation requirements. Byelaws relating to water supply, sanitation provisions, minimum plot size, off street parking, fire protection, electrical installations, building materials, plinth level, water supply, drainage and sewerage disposal, efficient use of energy and structural controls. Scrutiny and approval of building plans. Standards for maintaining fair constructional practices. Development code pertaining to residential and non-residential premises. Building protection: Meaning, systems, guidelines. Fire proofing materials, fire protection devices, damp proofing, termite proofing. Features of lightening resistant buildings. Protection of buildings against natural calamities: flooding, storms, earthquake. Protection against theft, dacoits and wild animals. Installation of sophistic safety gadgets: CCTV system, security camera, smoke alarms, security locks etc. Sound, thermal and electrical insulation of the buildings.

- ID 202 Windows and Window Treatments** **2+1** **Sem. I**  
 Window terminology. Types of windows and window treatments. Importance, need and purpose of a curtain/ draperies. Factors influencing choice of window treatments. Types and styles of curtains and drapes - contemporary - modern curtains, traditional curtains, decorative and specialized curtains and readymade curtains. Fabric selection for curtains/draperies. Need for curtain linings for curtains. Selecting a hanging system for curtains - rods and poles, rings and finials. Types of decorative curtains, Blinds, shutters, shades and screens. Visual choices in curtain selection - pattern and texture. Curtain headings - valances, cornices, swags, cascades. Energy efficient windows. Curtain accessories. Curtains for different rooms. Thermal curtains. Selecting curtain length. Functional considerations for deciding window treatments.  
 Practical: Market survey for various types of curtain materials and hanging systems and their cost. Collecting samples of different materials. Making samples of different types of curtains. Planning window dressings for different types of windows, problem windows and their treatment. Elements and principles of design in windows. Window treatments for congenial environment.
- ID 203 Building Technology** **2+1** **Sem. I**  
 (In collaboration with Department of Civil Engineering)  
 Introduction to building and its components - foundation, plinth, damp proof course, walls, columns, beams, slabs, lintel, floor, doors, windows and ventilators, stairs, roof. Low cost housing for rural households. Protection to buildings-damp proofing, termite resistance and fire protection.  
 Framed structures - concept and advantages. Basic soil properties- water content, density, specific gravity, void ratio, porosity. Index properties. Soil investigation and testing. Foundation types (isolated foundation, combined foundation, raft foundation). Procedure in design of different foundations (isolated, combined and matt). Soil investigation and testing. Foundation types (isolated foundation, combined foundation, raft foundation). Procedure for construction of different foundations.  
 Practical: Visit to different hardware stores and constructional sites, practical on damp and termite proofing treatments in buildings and general measures of fire safety in buildings. Visit to construction sites, Identification of soil for construction, Preparation of drawings for isolated foundation, combined foundation, raft foundation.
- ID 204/FRM 306 Interior Design Drawings** **1+3** **Sem. I**  
 Drawing equipment. Introduction to scale and measurement. Types of designs and sources, design process and phases of design process. The theory of projections. Different rendering techniques and symbols used in architectural drawings.  
 Practical: Concept development including ideation, schematics and concept statements. Design drawings including plans, sections, elevations and details. Different projections and views - perspective drawings (one point, two point), orthographic projections (parallel projection) and views. Isometric projections and views. Axonometric views. Oblique projections. Perspective drawings. Drawing isometric views from orthographic projections. Drawing of doors, wall units and windows.
- ID 205 Computer Applications in Interior Designing - I** **0+2** **Sem. I**  
 Preparation of room plants / layouts on computer. Furniture arrangement in various rooms with the help of software packages. Preparation of house plants / layouts for one bedroom house, two bedroom house and three bedroom house. Colour schemes for different rooms. Placement and arrangement of wall hangings and other accessories. Preparing lighting plans for different rooms.
- ID 206 Residential Interior Space Design** **2+1** **Sem. I**  
 Introduction to planning and designing of interior spaces; principles of planning interior spaces; arrangement of spaces for aesthetic and other human considerations; Space requirement for various activities; factors affecting allotment of spaces in different areas; various aspects of space designing, cost, expressiveness, function and beauty. Optical illusion and its role in space designing. and creation of spaces through design elements and principles; careful planning of storage in different rooms and kitchens; types of storage units; principles of storage planning; ways to create spaciousness; space designing for aged and physically challenged people; consideration of future needs in space design.

Practical: Drawing floor plans of different rooms; functional arrangement of furniture and other accessories with recommended space allowances; critical appraisal of utilization of unused spaces in different areas of house; designing of various storage units; existing and functional (modified) floor plans of residential places. Survey of market regarding space saving furniture, storage units and other accessories.

**ID 207 Rendering and Presentation Techniques** **0+2** **Sem. I**

Different Rendering techniques and symbols used in architectural drawings. Drawing various textures. Techniques for showing various materials in buildings. Techniques for various types of floor finishes. Drawing plants, rocks and water. Drawing of furniture and fabrics. Methods of drawing windows in multi floored building (by ways of rendering Shadows). Simple free hand drawings. Plan and elevation of small house using rendering techniques. One point perspective of small house using rendering techniques. Arial view of small house using different rendering techniques.

**ID 211/FRM 302 Furniture Design and Arrangement** **2+1** **Sem. II**

Furniture style in different periods. Materials used for furniture fabrication-wood, metal, plastic, glass, wicker, rattan, cane and rush. Upholstered furniture. Quality of construction. Types of furniture and their selection - tables, desks, seating furniture, sleeping furniture and storage furniture. Furniture arrangement for various rooms and occasions. Cost estimation of furniture for different income groups and areas. Space saving, multipurpose and modular furniture.

Practical: Design evaluation of furniture for various activities. Space saving multipurpose furniture. Arrangement of furniture for various occasions and different income groups on scale drawing. Market survey for latest trends in furniture design. Sketch drawing of furniture items for different users. Care of different types of furniture.

**ID 212/ FRM 305 Floral Creations** **1+3** **Sem. II**

Use of basic tools, equipment and containers for flower arrangement. Materials used, selection, cutting and storage of flowers. Prolonging life of cut flowers. Principles, designs and types of flower arrangements. Procedure for making flower arrangements. Application of colour in flower arrangements. Identification and characteristics of seasonal flowers. Identification and maintenance of potted plants.

Practical: Preparation and maintenance of Bonsai. Collection of flowers, storage and arrangement. Selection and preparation of plant materials. Care of flowers and foliage. Preparation of different styles and types of flower arrangements. Flower arrangements for different rooms and occasions. Preparation of permanent arrangements. Drying and preservation of flowers and foliage using different techniques. Preparation of utility and decorative articles from dried flowers and foliage. Preparation of bouquets, garlands and jewellery. Arranging exhibition.

**ID 213 Interior Design Detailing** **1+2** **Sem. II**

Principles of space planning related to interior design. Components of interior designing: Flooring, wall elements, false ceiling, lighting, furniture, wall units, and storage cupboards. Principles underlying layout of components of home interiors. Design parameters for preparing detailed drawings: of materials and finishes used, false ceiling, wall units, storage cupboards, flooring pattern, staircase, fire place, furniture, light fixtures and entrance. Window and door designs. Detailing of kitchen, bathroom and utility area layouts. Importance of lighting and electrification with respect to furniture and false ceiling layouts.

Practical: Elevations and sections with respect to furniture layout and interiors according to materials and finishes. Construction details of all ceiling materials, flooring materials, wall finishes, wall elements and wood work. Layout detailing of lighting fixtures, staircase, fire place, wall units and storage cupboards. Kitchen drawings with section (platform, storage, dado tec.). detailed drawings for selected furniture items, wall units and show cases.

**ID 214/ FRM 303 Floor and Floor Coverings** **2+1** **Sem. II**

(In collaboration with Department of Civil Engineering)

Definition, importance, types and ergonomic considerations. Selection of hard floor materials - brick, concrete, stone, tile, terrazzo and wood. Selection of resilient floor materials - asphalt tiles, linoleum, cork, rubber and vinyl. Soft floor coverings. Types, care and maintenance of floor and floor treatments. Types, selection, installation methods, care and maintenance of carpets and rugs. Indoor and outdoor carpeting.

Use and importance of floor coverings in interior decoration. Floor decoration. Storage of floor coverings, pretreatment and storage techniques. Eco-friendly flooring.

Practical: Market survey for various types of floor materials and floor coverings, their installation and cost estimation. Project work on traditional and contemporary floor treatments. Floor decoration. Care of floor coverings. Eco friendly cleaning techniques for floors and floor coverings. Project work on low cost floor materials.

**ID 215 Lighting in Interiors**

**2+1**

**Sem. II**

Importance of lighting in interiors. Natural and artificial lighting. Maximizing lighting in interiors through window locations, window sizes, window treatments, architectural devices, landscape, and interior finishes. Categories of lighting effects. Lighting economy. Lighting luminaries/ fixtures. Lighting for different spaces and activities in the residential and non residential interiors. Outdoor and indoor lighting for reassurance and safety. Technical factors - measures of light, control of light, location and direction of light, size and shape of light source, and colour of light. Lighting for comfort and adequate safety. Need for quality in the selection of lighting in the built environment.

Practical: Influence of light on colour in simulated conditions. Drawings to show the effect of different types of lighting in interior spaces. Lighting calculations for interior spaces using different methods- cavity method and point to point method. Market survey to study various lighting fixtures.

**ID 301 Kitchen and Bathroom Designing**

**1+2**

**Sem. I**

Principles of planning kitchen and bathroom; floor, wall finishes, counter materials and colour schemes used in kitchen and bathroom. Different styles of kitchen and bathrooms. Lighting, ventilation, wiring, water supply and storage provisions. Basic (shower, wash basin, bathtub, taps etc) and luxurious fixtures (railings, bath curtains, hangers, holders, mirrors, plants etc.). Concept and design of modular kitchens. Functional designing of kitchen and bathroom. Space requirement of different equipment, accessories and fixtures used in kitchen and bathroom.

Practical: Basic layouts of kitchen and bathroom. Planning and arrangement of different equipment, accessories and fixtures used in kitchen and bathroom considering human factors. Designs of various types of modular kitchens and their cost estimation. Survey of various showrooms related to kitchen and bathroom for knowing their latest trend in material and design.

**ID 302 Sculpture and Modelling**

**1+2**

**Sem. I**

Introduction to Indian Sculpture. Developing an awareness of pictorial elements such as point, line, shape, volume texture, light and colour. Basic designs problems. Sculpture of the 19th - 20th centuries. Modern Sculpture. Clay Modeling. Design tactile and malleable quality of clay. Carving in modeling and Sculpture. Carving of traditional and contemporary wood sculpture. Treatment of wood surfaces. Wood coloring. Carving techniques.

Practical: Designing of modeled heads, torso, figures. Study of composition of clay. Different types of portraiture in clay and plaster. Carving of wood, stones and marble by direct and indirect method. Flexible mold making. Casting and Modeling. Use of M seal for sculpture. Wood sculpture. Wood carving. Basic cutting and joining techniques. Decorative designs with motifs of leaves, flowers and birds. Geometrical patterns suitable for outdoor sculpture etc.

**ID 303 Furniture Design Detailing**

**1+1**

**Sem. I**

Different types of woods used for furniture. Construction quality of furniture - joints, finishes and design. Techniques in furniture construction. - shaping, carving, turning, fluting, reeding. Construction of upholstered furniture. Furniture types - built - in and modular, beds, seating, tables and desks, storage units, outdoor furniture.

Practical: Survey of trends in furniture design in the market. Visit to furniture shops and workshops to study various processes of furniture construction. Designing of five furniture items and preparing their drawings and models. Furniture design detailing and rendering. Detailed study of various construction features of furniture.

**ID 304/ FRM 405 Functional Interiors for Special Needs**

**1+1**

**Sem. I**

Housing environments - interiors based on functional needs. Interiors for children, elderly and people with

other special needs - furniture, lighting and indoor climate in different rooms. Planning and designing interiors for children, elderly and people with special needs. Functional interior options for specific purposes and special needs - fittings, space allowances/requirement and special provisions in different rooms.

Practical: Simulating interior environments for specific purposes. Making master plan concepts through drawings of interiors for special needs. Arranging simulated interiors for special needs/ specific purposes like continuing care and nursing care.

**ID 305 Computer Applications in Interior Designing - II** **0+2** **Sem. I**

Basic concepts for computer-aided design, drafting skills within the built environment applications. Use of 2D CAD commands used in architectural drafting and design to prepare drawings through Auto CAD. Introduction to Presentation techniques through Adobe Photoshop, understanding 3 dimensional modelling through Google sketch up.

**ID 311 Vaastu in Interiors** **2+0** **Sem. II**

Vaastu: meaning, history and importance. Vaastu principles, concepts based on various phases of Zodiac signs. Site, direction, elevation and plan evaluation according to Vaastu. Vaastu: Scientific application, myths and reality. Key elements of Vaastu. Importance of Vaastu for environment, comparison with Feng Shui. Vaastu for residential and non residential buildings. Importance of direction of doors, windows, fire place, furniture, cook and bathing area. Significance of corners, obstacles in main entrance. Placement of different accessories according to Vaastu. Remedial Vaastu for already built house. Major and minor changes in habitable and non habitable areas of the house/buildings. Location of pooja place, overhead tank, bore well, drainage and garden. Dealing with Vaastu faults without breakages.

**ID 312 Advanced Building Services** **2+1** **Sem. II**

(In collaboration with Department of Mechanical Engineering)

Energy conservation in residential buildings. Electrical services, basic concepts, wiring tests and problems. Requirements of electrical materials; conductors, insulators, electrical cables, Safety devices. Acoustics of buildings. Air conditioning of buildings: principles of comfort air conditioning. HVAC: concepts, definitions and classifications. Fire prevention and fire fighting systems. Communications and IT services installation and cabling. Illumination: concepts and considerations for artificial lighting. Different types of indoor and outdoor lighting. Building services with special reference to geriatrics and disabled. Eco- friendly amenities and services in buildings: product and processes.

Practical: Survey of different systems of air conditioning. Visit to water treatment plant, sewage treatment plant. Visit to multi-storeyed apartments to study water supply services. Visit to energy conservative buildings. Exposure visits to cinemas and open air theatres to study the sound insulation.

**ID 313 Computer Applications in Perspective Drawings and Rendering** **0+3** **Sem. II**

Development and practice exercises for 1-point and 2-point perspectives for different building typologies. Understanding the methods and conventions of tonal variations in rendering representations for plans, elevations and views, enhancing drafting skills for design applications using 2D and 3D CAD applications.

**ID 314 Wall Units and Cabinets** **0+3** **Sem II**

Designing and drawing front elevations of wall units for various rooms of residential buildings - living room, bed room, drawing room, study room, children's room, lobby and dining room. Designing wall units for non-residential buildings - shops, libraries, show rooms, offices, art galleries. Visit to residential and non-residential buildings to study wall units and cabinets' design. Designing cabinets for residential and non-residential buildings for storage of different purposes - clothes, shoes, crockery, books, utensils, food items etc.

**ID 315 Fittings and Fixtures for Interiors** **1+1** **Sem. II**

Sanitary fittings and appliances: Ventilation system, Water closets, Flushing cistern, bath tubs, lavatory basins, systems of plumbing. Door hardware: hinges, locks, latches, knobs and handles, Fireplace accessories, Lighting Fixtures, sanitary fittings: Types, care and cleaning, water dispensing appliances and sanitary fixtures. Fixtures required for installation of communication and IT services. Fitting requirements, fixtures for effective acoustic design in commercial buildings.

Practical: fixtures and fastenings for doors and windows, Identification and study of fittings used for plumbing in domestic buildings. Economic analysis of various electrical fixtures for cost effective electrical services. Identification and study of technical terms for various types of fixtures and fittings: electrical, electronic, fire fighting, sanitary, communication and refrigeration etc.

**ID 316 Special Spaces and Public Interiors** **2+0** **Sem. II**

Introduction to special purpose spaces. Basic principles of interior designing of special purpose spaces - lofts, studios, workshops, sewing rooms, darkrooms, home offices, media rooms, conservatories, green houses, courtyards, atriums, pools, terraces, patios, roofs, decks etc. Interior design principles for public interiors - shops, shopping malls, showrooms, offices, banks, museums, galleries, libraries, theaters, auditoriums, temples, churches, institutional buildings, restaurants, hotels, motels, clubs, transportation etc. Interior and exterior landscaping. Use of Colour and vastu. Guidelines for selection of materials for special purpose spaces and public interiors: walls, wall coverings, floors, floor coverings, soft furnishings, windows, window treatments, ceilings, doors and other elements of walls, accessories, wall units and cabinets, and furniture.

**ID 401 Seminar** **0+1** **Sem. I**

**ID 402 Interior Design Studio** **0+3** **Sem. I**

Advanced study of interior design process. Development and execution of design ideas. Advanced study of the design process through problem statement, programming, concept development, presentation, final design development and documentation. Human factors in relation to interior design projects. Development of design for commercialization. Preparation of five designs of medium and high degree of complexity for general use and for special populations. Collection of designs of famous designers. Preparations of portfolio, creating a personal logo for portfolio. Portfolio presentation.

**ID 403 Non-residential Interior Space Design** **1+1** **Sem. I**

Planning and designing of interior spaces of non-residential buildings. Guiding principles of planning interior spaces of non-residential buildings. Functional and aesthetic arrangement of interior spaces. Space requirement for different commercial activities. Factors consideration for allotment of spaces in activity and storage areas of non-residential buildings. Space creation through design elements and principles. Planning of storage in commercial area and store rooms.

Practical: Drawing floor plans specific commercial activity of non-residential buildings. Functional and aesthetic arrangement of storage areas for displaying articles. Arrangement of furniture and display/storage units with reference to recommended space allowances. Suggestions to reorganize the existing arrangements. Survey of different commercial areas banks, government and corporate offices, shops, shopping malls, institutional buildings.

**ID 404 Professional Applications in Interior Design** **2+0** **Sem. I**

Interior design as a career- the classifications of interior design, responsibilities of an interior designer, preparing for a career in interior design, opportunities for interior designer, the computer application for interior designing. Increasing professionalism in Interior Design. Preparation for the Profession, Project Management, Professional design organization. Body of Knowledge for first Professional Degree level Programmes. Growing Public interest in design. Computers and design, Computer tasks, Make Data banks for information, Drafting, perspective drawing, Planning, Estimating, Specifying and ordering User participation in Design, Consultant Design services, National Council for Interior Design Qualification. Professional interior design society. Ethic. principles and licensing in Interior Design profession. Typical contract document, formats and resume concepts related to professional practice. Types of Future Projects, project formulation and delegation of work. Collaboration with market links for support materials and services. Future trends in Interior Design.

**ID 405 Advances in Materials for Interior Design** **0+2** **Sem I**

Market survey for latest materials in paints and finishes- oil paints, enamels, pigments, varnish etc. and application methods; floors and flooring materials- wood, marble, ceramic tiles, glass blocks, etc; walls- stones, plaster, wall paper, wood, glass block, concrete, mirror, fabric, acoustical panels etc; ceilings- plaster, wood, acoustical ceilings, metal, ceramics tiles etc; cabinets - materials, drawers, doors, hardware,



shelves etc; window dressings and accessories, soft furnishings, textiles materials, planters, landscaping concepts, floral creations, lighting fixtures, accessories for interior enrichments, furniture designs and styles, kitchens- appliances, fixtures, cabinets, counters, floors, walls etc; bathrooms- faucets, tubs, showers, bidets, shower cabins; other components- mouldings, doors, door hardware, fireplaces etc. collecting samples and photographs of latest materials related to interiors.

**ID 406 Landscape Design** **2+1** **Sem. I**

Introduction to landscaping. History of gardening in India. Landscaping of homes - natural elements, principles, factors affecting design, styles of gardening. Terrace gardening. Principal groups of plants - trees, shrubs, climbers, bulbous plants and their importance in landscaping designing. Application of principles of art in landscaping. Location and orientation. Climatic conditions. Land profile. Soil types. Availability of water sources. Materials for paving and walkways. Features of rock garden and water garden. Lawn and its management - selection of grass, preparation of soil, planting of grass, diseases and other problems. Features of Japanese gardens, English gardens and Mogul gardens.

Practical: Planning tree guards, sit-outs and open ground sheds for semi-shady plants, gazebo, pedestals, monuments, statues, abstracts etc. study of indoor and outdoor plant species. Variety of shrubs, creepers, grass etc. water drainage. Designing of terrace garden. Natural and artificial water bodies. Garden furniture. Outdoor and indoor designing of party landscaping. Visit to local nurseries.

**ID 407/ FRM 403 Accessories for Interior Enrichment** **1+2** **Sem. I**

Importance of accessories in interiors. Functional and decorative accessories. Selection and placement of accessories in different parts of the interiors. Various types of accessories used in homes - mirrors, books, murals, clocks, screens, cushions and hassocks, mats, lamps, artifacts, antiques, baskets, glassware, chinaware, house plants, pictures and wall hangings. Planning a wall grouping. Three dimensional accessories for special effects. Lighting as an accessory. Buying guidelines for accessories. Guidelines for arrangement of accessories in interiors.

Practical: Market survey on latest trends in accessories. Preparation of any ten accessories like candles, pots, wall hangings, glass painting, mixed media wall hanging, lamp shades and decoupage articles. Organizing an exhibition on accessories.

**ID 421 Internship I - Inplant Training** **0+8(NC)** **Sem. II**

Placement of students with an architect or interior designer or interior design studio to study the functioning of the organization. Training of students for on-going interior designing residential and non residential projects.

**ID 422 Internship II - Inplant Training** **0+8** **Sem. II**

Handling interior design projects of medium complexity by the students for general use and special populations with special focus on human factors. Practice at solving problems related with interiors.

**ID 423 Internship III - Project Report and Presentation** **0+4** **Sem. II**

Development of entrepreneurial and managerial skills. Preparation of project proposal for establishment of an interior design firm or studio.

## HUMAN DEVELOPMENT

### PROGRAMMES

#### 1. M.Sc.

#### 2. Ph.D

### COURSE REQUIREMENTS

#### M.Sc.

Field of Specialization

Child Development, Family Studies

Required Courses

HD 501, HD 502, HD 503, HD 504, HD 505

Supporting courses

Stat 421, 501 and other courses from subject matter fields (other than Minor) relating to area of special interest and research problem.

Minor fields

Business Management, Extension Education, Home Science Extension and Communication Management, Family Resource Management, Food and Nutrition, Sociology or any other as approved by the Dean Postgraduate Studies.

Deficiency courses for the students with elective other than Human Development.

9-12 credit hours of atleast 400 series courses as recommended by the Student's Advisory Committee and approved by the Dean, Postgraduate Studies

#### Ph.D

Field of Specialization

Child Development, Family Studies

Required Courses

HD 601, HD 602, HD 603

Supporting courses

Courses from subject matter fields (other than Minor) relating to area of special interest and research problem.

Minor fields

Business Management, Extension Education, Home Science Extension and Communication Management, Food and Nutrition, Sociology or any other as approved by the Dean Postgraduate Studies.

Deficiency courses for students with M.Sc.(Home Science) in a discipline other than Human Development

HD 501, HD 502, HD 503, HD 504, HD 505 and other courses as recommended by Student's Advisory Committee and approved by the Dean, Postgraduate Studies

## DESCRIPTION OF COURSE CONTENTS

### Undergraduate Courses

- HD 91 Introduction to Home Science Education** **1+0** **Sem II**  
Meaning and scope of Home Science Education. Genesis and growth of Home Science Education in India. Different disciplines of Home Science. Academic programmes of Home Science College. Role of Basic and Applied Sciences in Home Science. Career opportunities for Home Scientists. Women empowerment/ entrepreneurship through Home Science Education.
- HD 101 Development during Early Years** **2+1** **Sem I**  
Human Development- concept, need and scope. Basic concepts - heredity and environment, growth and development, maturation and learning. Principles of growth and development. Factors affecting various developments. Critical periods in development. Stages of human life span. Prenatal care and development. Donor insemination, invitro fertilization and surrogate motherhood as alternative methods of conception. Genetic counselling. Importance of prenatal diagnostic techniques. Birth process and types of birth. Postnatal care of mother and child. Characteristics of the new born. Causes and care of premature baby. Neonatal reflexes. Breast feeding and weaning. Immunization. Developmental milestones. Physical, language, cognitive, moral and socio - emotional development during infancy and early childhood. Common behavioural problems of children and disciplinary techniques. Importance of early stimulation. Practical: Demonstration of techniques of feeding, bathing and dressing of new born and infants. Monitoring growth and development of infants and toddlers. Assessment of physical, motor, cognitive and socio-emotional development during childhood. Visit to Human Development laboratories for conducting activities to promote various developments.
- HD 102 Early Childhood Education** **2+1** **Sem II**  
Meaning, need, importance, scope and objectives. History of early childhood education. Contribution of Western and Indian educators. Pre-basic education plan and pre-school education during Five Year plans. Recommendations and suggestions of various committees and commissions. Types of early childhood education programmes. Problems of early childhood education in India. Agencies promoting and monitoring early childhood education. Principles and types of curriculum planning. Significance, types, selection, arrangement and maintenance of play and play materials. Use of natural resources. Planning age specific activities. Qualities and responsibilities of early childhood education personnel. Parent involvement in early childhood education programmes.  
Practical: Visit to early childhood care and education centres and recording observations regarding routine activities. Planning and conducting age appropriate group activities for all round development of children. Observation of a parent teacher meeting being conducted.
- HD 103 Late Childhood and Adolescence** **2+0** **Sem II**  
Meaning, characteristics and developmental tasks. Physical development- growth patterns, body proportions, bone and muscle development, development of motor skills. Puberty, pubertal changes, psychological and social impact of puberty. Early and late maturation. Piaget's concrete and formal operational stage of cognitive development. Characteristics of social development. Social cognition, transition and adjustment. Gang and its functions. Emotional development during late childhood and adolescence. Common emotions and their patterns, causes of heightened emotionality. Piaget's and Kohlberg's stages of moral development. Freud's psycho-sexual stages and Erikson's psycho-social stages of personality development. Gender and sexuality- sexual interest, attitudes, behaviour and sex role development. Behavioural, psychological and personality problems of late childhood and adolescence and appropriate counselling mechanism.

- HD 106 Human Values in Education** **1+1** **Sem I/II**  
 ( For students of constituent Colleges of the University)  
 Universal human aspirations- happiness and prosperity. Human values and ethics- concept, definition, significance and sources. Fundamental values- right conduct, peace, truth, love and non violence. Ethics- professional, environmental, ICT. Sensitization towards others particularly senior citizens, developmentally challenged and gender. Spirituality, positive attitude and scientific temper. Team work and volunteering. Rights and responsibilities. Road safety- initiatives, measures and hurdles. Traffic rules, road rage. Kohlberg's Theory of Moral Development. Human relations and family harmony. Modern challenges and value conflict. Practical: Group discussions and exercises in natural acceptance of human values. Facilitating a process of self observation and self exploration of thoughts and actions: needs v/s greeds; self esteem v/s ego; sensory pleasures v/s real happiness; jealous v/s zealous; discrimination v/s prioritization, donating v/s sharing; excess v/s moderation. EQ and SQ exercises for moralisation of desires, neutralisation of anger and eradication of worries. Awareness of road signs, signals and law enforcement. Case studies. Developing personal code of conduct.
- HD 201 Children with Special Needs** **2+1** **Sem I**  
 Concept and classification of children with special needs. Concept of impairment, disability, handicap and special education. Pros and cons of labelling. Special education- segregation, mainstreaming and integration. Definition, classification, etiological factors and characteristics of different developmental disabilities like mental retardation, visual handicaps, hearing impairment, speech and language handicaps, physical handicaps, learning disabilities, autism, emotional and social maladjustments. Importance of early intervention and parent involvement. Policies and legislation for the disabled. Local, national and international welfare organizations, institutes and programmes for special children. Practical : Visit to institutions catering to the needs of children with different disabilities. Observing and recording the functional programmes and interventions in these institutes. Etiology, characteristics and identification of children with different disabilities. Recording information for case studies.
- HD 202 Dynamics of Marriage and Family** **2+0** **Sem II**  
 Definition, purpose and functions of marriage. Types of marriage. Mate selection. Prelude to marriage- dating, engagement and courtship. Preparation for marriage. Marriage in different Indian societies. Criteria of a successful marriage. Marital adjustments. Definition, nature and functions of family. Biological and social basis of family. Evolution of family as an institution. Concept and stages of family life cycle. Structure and forms of family across the country- tribal, rural and urban. Changing trends in family system. Causes and consequences of family disorganization. Family crisis and counselling. Factors responsible for the changing structure of the modern family. Terminology, principles and patterns of kinship. Types of kin groups.
- HD 301 Adulthood and Ageing** **2+0** **Sem I**  
 Concept of adulthood and ageing. Characteristics of early adulthood. Physical, social and mental changes during early adulthood. The family system at the early adulthood stage. Characteristics of middle adulthood years. Understanding midlife crisis or transitions. Physical, social, mental, developmental changes and issues at midlife. Family dynamics during middle adulthood years. Characteristics of late adulthood years. Developmental tasks of late adulthood. Physical, social and mental changes during late adulthood. Support system at the ageing family stage, living arrangements and institutionalization. Adjusting to occupational transitions, retirement and leisure. Demographics of ageing. Understanding the status of the aged with the societal changes. Developmental changes preceding death. Psychological reactions to bereavement and grief. Influence of religiosity and spiritual support on subjective well being during late adulthood.
- HD 302 Infant Stimulation Programme** **2+1** **Sem II**  
 Concept of stimulation and intervention. Need and significance of early stimulation. Planning for observation and recording of development and behaviour in different ecological settings- Laboratory Day Care Centre, Laboratory Nursery School and Toddler Laboratory. Role of environment in stimulation of various developments of children- physical, social and emotional development. Mother-child interaction and its quality. Home based approach. Infant stimulation activities based on different senses - touch, sight, sound, taste and

smell. Infant stimulation through different play materials i.e. cards, toys, mobiles, flash cards, pictures and games. Different stimulating programmes. Enhancing infant stimulations such as visual, tactile (infant massage) and auditory stimulation. Strategies of implementation of the stimulation programme. Role of music therapy in infant stimulation.

Practical : Observation and recording of development and behaviour of infants in different ecological settings. Study of existing stimulation practices and materials. Preparation of stimulation programme and stimulation kit for various developmental domains. Implementation of stimulation programme.

**HD 303 Developmental Assessment of Young Children** **2+1** **Sem II**

Definition, need and functions of assessment. Screening and measurement concepts. Trends and challenges in developmental assessment of young children. Tools and techniques of assessment, their importance and identification. Screening and diagnostic assessment of young children for various developments through different tools and techniques. Interpretation of assessment information for parents, educators and policy makers. Anthropometry- definition, instruments used in anthropometric measurements. Case study- definition, advantages and disadvantages. Identification of children with developmental challenges. Ethical issues in assessment of children.

Practical: Screening and diagnostic assessment of young children for various developments. APGAR early screening profile. Physical and motor development, anthropometric measurements. Motor and behavioural assessment using Bayley's Scale for Infant Development and McCarthy's Scale for measurement of Cognitive Abilities of children. Assessment of language, social and self care skills. Emotional maturity scale. Home inventory (modified) for families of pre-schoolers and elementary school children. Recording and interpretation of assessment. Report writing.

**HD 304 Developmental Planning for Child Care Services** **2+1** **Sem II**

Definition and importance of developmental planning. Developmental characteristics of early childhood years. Need and significance of child care services. Learning approach in early childhood education. Role of teacher in planning. Developmentally appropriate active learning approach. Issues and goals of curriculum planning. Principles of effective programme planning. Types of planning. Evaluating programme for the whole year for young children. Concept of quality in early childhood education. Measuring quality. Planning and developing developmentally appropriate activities for different concepts. Developing activities for movement and mobility, cognitive, socio-emotional and moral development. Developing and conducting activities for furthering language development. Concepts, methods and strategies in communication. Current trends and practices.

Practical: Observing and recording developmental characteristics of children in various early childhood care and education settings. Preparing and operationalizing developmentally appropriate activities for movement, mobility, cognitive and concept development in children. Evaluating the impact of the executed programme. Involving parents.

**HD 305 Entrepreneurship in Child Care Services** **2+1** **Sem II**

Concept, need, characteristics, functions and types of project planning. Ethical considerations in project planning. Format for submission of proposal. Types of child care and education programmes. Objectives and services of different programmes. Need assessment. Method and significance of need assessment. Funding agencies. Budget planning and accounts. Short term and long term budget planning. Staffing and supervision. Legal and regulatory processes at national and international level. Registration and licensing. Infrastructure development- location, indoor and outdoor space requirements. Setting up the physical environment and facilities. Setting the learning environment. Short term and long term programme planning and evaluation.

Practical: Preparing a project proposal. Need assessment in different settings for various programmes, selection of locale and clientele. Layout planning for different programmes in rural and urban settings. Manpower, finance, infrastructure facilities and cost benefit analysis as input sources. Report writing.

**HD 306 Child Guidance and Family Counselling** **2+1** **Sem II**

Definition, nature, scope, need and principles of guidance. Aims and objectives. Types of guidance such as educational, vocational and personal. Benefits and limitations of guidance services. Organization of guidance services at school level. Definition, need, aims and principles of counselling. Counselling process.

Directive, non directive and eclectic approaches to counselling. Individual and group counselling. Purpose, advantages and limitations of different types of counselling. Counselling in specific areas such as families, children, delinquents and drug addicts. Pre-marital and marriage counselling. Qualities of a counselor. Types, limitations and interpretation of psychological testing and diagnosis. Definition, processes and techniques of psychotherapy. Traditional Indian mechanism of guidance and counselling.

Practical: Identifying families with problems and conducting case studies. Introducing tests and techniques used during guidance and counselling. Development, monitoring and evaluation of intervention programmes. Developing resource files of activities of local, state and national organizations working in the area of child guidance and family counselling. Field surveys.

**HD 401 Child and Family Welfare** **2+1** **Sem I**

Concept, significance and scope of child and family welfare. Historical orientation to child and family welfare services in India. Rights of children and initiatives in India. Child abuse and neglect. Child and family welfare organizations and programmes. Government agencies, voluntary agencies and child welfare programmes at international and national level. Organizational structure, objectives and functions of different agencies. Welfare programmes for children, youth, women and aged operating at local, state, national and international level. Objectives and functions of these programmes and beneficiaries. Concept, need and objectives of population education. Causes, effects and measures of population explosion. Need, importance and methods of family planning.

Practical: Visit to various local agencies working for the welfare of children, youth, women and senior citizens. Assessment of the programmes and activities of these agencies. Exploration and documentation of child abuse. Identification of supportive services for family. Visit to family planning centres. Survey to understand causes of mortality and morbidity among mothers and children. Constructing a demographic profile.

**HD 402 Parent Education** **2+1** **Sem I**

Concept, need and importance of parent education and parent involvement. Rationale for parent involvement. Parent education versus parent therapy. Popular parent education programmes. Need assessment for parent education programmes in various socio-cultural settings. Benefits of teacher-parent partnerships. Techniques for developing partnerships-rapport building, informal communication with parents, parent-teacher conferences and home visits. Parent training programmes and involving parents in behaviour modification process. Basic considerations in planning a parent involvement programme. Activities for parents involving educational and therapeutic intervention. Methods of parent education, group versus individual instructions. Evaluating parent education programmes. Parent education during different stages of family life cycle.

Practical: Need assessment for parent education. Planning parent education programmes for various stages of family life cycle. Execution of parent education programmes in rural, urban and slum settings. Use of different techniques of parent education - lectures, demonstrations, role play, mass communication, panel discussions etc.

**HD 403 Creative Experiences for Children** **1+1** **Sem I**

Concept, significance, objectives and aspects of creativity. Types of creative expression. Sources of creativity. Creative learning, techniques and different areas. Creativity in fostering learning. Role of creativity in the development of a child-physical, social, emotional, cognitive and language. Fostering creativity among children at home and in school. Developing and using a creative environment for children. Role of media in creative experiences. Training personnel in providing creative activities for children.

Practical: Survey of indigenous and modern creative materials for school children. Planning and conducting programmes for early childhood care and education for different creative activities. Setting and conducting various creative activities for children like painting, drawing, printing, paper craft, cutting and pasting, clay modelling, paper machie, garlands etc. Preparing collage, masks and puppets. Toy making out of waste and card making. Developing creative art resource files for children.

**HD 404 Dramatic and Rhythmic Activities for Children** **1+1** **Sem I**

Definition, need and significance of dramatic and rhythmic activities for children. Aims and purpose of drama for young children. Understanding the basic elements of drama such as sound, rhythm, movement, mime, gestures and speech. Unstructured and structured drama. Audio-visual material for dramatization

and rhymes. Role of drama in cognitive, language, emotional, social and motor development. Criteria for preparation of different material used for dramatic and rhythmic activities. Need and significance of musical experiences for children. Story telling. Role of teacher in planning dramatic and rhythmic activities.

Practical : Collection of songs, rhymes, stories, dramas and video material. Preparation of different materials for dramatization and rhymes. Use of children's theatre. Role playing. Providing experience in drama and music. Locating traditional and latest technology used for drama. Use of prepared material for dramatization and rhyme. Audio - Visual presentation.

**HD 405 Literature for Young Children** **1+1** **Sem I**

Need, significance, characteristics and types of literature for young children. Principles of developing literature for different age groups. Types and significance of folk tales, folk songs, fantasy and fairy tales, poetry, picture books, short stories, comics, cartoons, science, fiction and literary books. Introducing literature to young children through discussion, story telling, music, art, dramatization and writing. Selecting appropriate literature for young children. Role of parents, teachers and children's library in developing good study habits. Techniques of stimulating children's interest in literature.

Practical: Survey of available children's literature in the market. Reviewing newspapers and magazines for popular topics. Evaluation of reading interests of children. Developing age specific literature for children. Developing techniques in evaluating and selecting literature for young children. Developing knowledge and skill in presenting children's literature using variety of methods

**HD 406 Developing Play Materials for Children** **1+1** **Sem I**

Definition, significance and value of play. Classification of children's play. Parten's classic study of play. Theories, stages and factors affecting play. Difference between play and games. Age appropriate play materials for physical, motor, socio-emotional, intellectual and cognitive development. Characteristics of good play materials. Selection, storage and maintenance of play materials. Implication of play on development.

Practical: Surveying the locally available culture specific play and play materials. Assessing the recreational and educational value of different play materials. Preparation of developmentally appropriate educational play material for physical, motor, socio emotional, intellectual and cognitive development such as blocks, puzzles, stuffed toys, dolls, puppets, flash cards, charts, posters, picture books, art and craft activities.

**HD 407 Intervention Programmes for Developmentally Challenged Children** **1+1** **Sem I**

Concept, need and significance of intervention services. Understanding the process of intervention. Identification of handicapped and at-risk children. Curriculum planning for developmentally challenged children. Developing need based intervention programmes and strategies for different categories of developmentally challenged children. Involving parents and community. Executing interventions and evaluating its effectiveness. Overcoming barriers to home-school collaboration. Strengthening teacher-community inter dependence. Understanding key elements for successful interventions- tailoring for individual needs, providing normality and integration, environmental compatibility and remedial services.

Practical: Need assessment for intervention in family, school and community. Developing need based intervention packages and strategies for different types of developmental challenges. Planning programmes to involve community agencies to strengthen the intervention programmes.

**HD 421 Internship-I Entrepreneurial Placement /Inplant Training** **0+2** **Sem II**

Placement with an entrepreneur for studying the organizational structure and activities of the institution. Planning and execution of programme for the beneficiaries. Evaluation of the efficacy of the programme. Development of entrepreneurial and managerial skills.

**HD 422 Internship II - Project Report and Presentation** **0+4 NC** **Sem II**

Development of entrepreneurial and managerial skills. Preparation of project proposal for establishment of centre including objectives, infrastructure, budgeting, working policies, staffing, programme planning and evaluation. Report writing and presentation.

**HD 423 Internship III - Experiential Learning in Child Care Providers Training** **0+8** **Sem II**

Developing skills in planning and designing quality child care and education programmes. Preparing layout plans for different types of early childhood care and education programmes in different settings. Budget

Planning. Long term and short term curriculum planning. Framing administrative policies. Hands-on experience in operationalization of the programme. Preparation and collection of educational material. Arranging and equipping the classroom. Implementation of prepared activity plan. Supervision of transition throughout the day. Working with children, parents and their families. Addressing emergencies.

## Postgraduate Courses

### **HD 501 Theories of Human Development** **3+0** **Sem I**

Meaning, types and functions of theory. Theoretical perspectives-biological, environmental, interactional and cultural context. Concepts and implications of psychoanalytic theory of Sigmund Freud and neo-Freudians. Psychosocial theory of Erikson. Field theory of Kurt Lewin. Stimulus - Response theory and social learning theories. Cognitive theory of Jean Piaget. Moral development theory of Kohlberg and Piaget. Attachment theory of Bowlby and Ainsworth. Chomsky's theory of language development. Maslow's need hierarchy theory. Ecosystem theory of Bronfenbrenner. Socio-cultural theory of development by Vygotsky. Comparative analysis of theories and their application. Integrated approach to theory building.

### **HD 502 Life Span Development** **3+0** **Sem I**

Life span development- heredity, environment, epigenesis and canalization. Physical and psycho-motor development. Brain development. Perceptual development and its role in cognition. Perception, cognition and metacognition. Models of Intelligence. Language development- components, theories, pre-linguistic development, phonology, semantics and bilingualism. Recent trends in psycho-social and moral development. Impact of psycho-social deprivation on different stages of development. Culture and its impact. Socialization practices and influencing factors. Emotional maturity, stability and catharsis. Vulnerability and resilience. Integrated view of development from a life span perspective. Recent research trends in human development issues. Seminal work of Margaret Mead, Uri Bronfenbrenner, Erikson, Piaget. Design and field work of "Six Cultures Project".

### **HD 503 Methods and Techniques of Assessment in Human Development** **2+1** **Sem I**

Assessment- Concept, methods, techniques and their efficacy. Anthropometric evaluation of nutritional status. Psychometrics. Development of psychological tests. Item writing and item analysis. Reliability and validity. Individual and group tests. Measurement of intelligence, aptitude, attitude and personality. Projective techniques. Assessment of environment. Sociometry- socio-economic measurements. Types of scales - nominal, ordinal, interval & ratio scale. Evaluation of scales used for measuring socio-economic status. Parameters of quality of life. Human Development Index. Content analysis of national and international reports on human development. Ethical issues in the assessment of human development.

Practical: Screening & diagnostic assessment for various developments through different tools and techniques. Anthropometric measurements, psychomotor and psycho-social development. Scales of cognitive development, language development, achievement, interest, aptitude, personality and temperament. Interpretation of assessment and report writing.

### **HD 504 Gender Issues and Family Relations** **2+1** **Sem II**

Concept of gender- biological and socio-cultural connotations. Importance of gender differences in human development. Gender theories- Gender orientation theory of Sandra Bem, Gender Schema theory, Theory of Ego Development and Gender. Demographic challenges to family ecology. Gender issues in family involvement and cohesiveness (socialization, family roles, responsibilities and family adjustment). Impact of gender roles, responsibilities and socialization practices. Working towards family solidarity and social well being. Values and ethics in the promotion of happy family life. Changing trends in gender role orientation, its socio- economic and cultural impact on the family and society.

Practical : Gender analysis of mass media content, books, television and films. Interviewing children and parents to study gender socialization practices. Administering gender role orientation scale to adolescents/ women. Interpreting the results and report writing. Case study of three-generation families to identify the differences in the gender oriented roles and responsibilities. Case studies for gender role performance.



- HD 505 Parent and Community Education** **2+1** **Sem II**  
 Concept and history of parent education with special reference to India. Objectives and theoretical approaches to parent education programmes. Techniques for parent and community education. Basic approaches to communication- group, mini group approach, large group and individual approaches, single and multi- media approach. Distance- home education. Parent education in school and community. Teacher as a parent educator. Recent development in communication- computers, electronic media, help lines. Personality traits and competence of parent and community educator. Parent involvement in community programmes. Special target groups for parent education.  
 Practical: Identification of gaps in knowledge of parents and community regarding care and development of children, adolescents, adults and elderly. Organizing parent and community education programmes and preparing educational materials for parent and community education.
- HD 506 Cognitive Development** **2+0** **Sem I**  
 Structure of cognition. Models of cognition. Learning processes. Conditioning. Verbal mediation. Recent changes in Learning Theory. Information processing system. Basic capacities. Cognitive strategies. Metacognition and everyday cognition. Ecological factors affecting cognition. Intervention strategies to improve cognitive development. New approaches to intelligence. Language and thought issues. Critical appraisal of research in cognitive development.
- HD 507 Children with Developmental Challenges** **2+0** **Sem. I**  
 Current issues, researches and statistics of developmentally challenged. Implications on the quality of life. Recent focus areas- attention deficit hyperactivity disorder, autism spectrum disorders, neurological disorders, communication defects and behaviour disorders- causes, characteristics and remediation. Forms of remedial methods- sensori-motor integration, occupational therapy, cognitive therapy and behaviour therapy. Counselling for parents and children. Guidance for teachers. Policies, government provisions, concessions, facilities and legislations for challenged children.
- HD 508 Adolescent Development** **2+1** **Sem I**  
 Adolescence- importance of the stage. Traditional and modern theories of adolescence. Perspectives of adolescent development. Biological development and maturation, consequences of puberty changes, sexual development, early and late maturation and psychological implications. Environmental learning, interactional and cultural context. Interpersonal relationships. Socio- cultural differences in attitudes of adolescents. Intellectual development- formal operations, complexities of adolescent thoughts. Moral development. Integration of self, psycho-sexual resolution and resolving identity crisis. Reorganization of social life relationship with peers and parents. Heterosexual relationships. Vocational preferences, training and work. Transition to adulthood- conflicts with special reference to contemporary socio - cultural changes.  
 Practical : Conducting case studies. Interviewing early and late adolescents on issues and problems, pubertal changes, friendships, career, aspirations, self and social awareness, political awareness and mass media preferences. Depicting adolescents in mass media- content analysis of media- films, television and literature.
- HD 509 Family Ecology** **3+0** **Sem I**  
 Family as a social system. Socialization within the family. Models of parenting. Social class and ethnic variations in child rearing. Family transitions. Impact of social change on family and changing family patterns in India. Religion and family. Contemporary issues related to family. Family disorganization. Family as an institution under stress. Needs and problems of families at different developmental stages. Changing trends in family relationships with special reference to family disruption, sickness, divorce and disability. Impact of consumerism on rural and urban families. Impact of emigration and multiculturalism on families. Two culture children and their psycho-social dilemmas. Marriage and family therapy.
- HD 510 Gerontology** **2+0** **Sem I**  
 Socio demographic profile of the aged in Indian context. Theoretical perspectives on ageing. Impact of ageing on physical, psychological and socio-emotional aspects. Elderly abuse. Ageing and health. Ageing and financial status. Stress among the aged and coping strategies. The aged in the family context- family relationships, problems, prospects and support systems. Contemporary socio-cultural changes and their

effects on the aged. International scenario of the aged. Research trends in gerontology and methodological issues. Welfare of the aged- policies and programmes.

**HD 511 Family Therapy** **2+1** **Sem I**

Theoretical developments in marital and family therapy. Schools of family therapy- structured, strategic, experimental and integrated family therapy. Areas and scope of marriage and family therapy. Social learning approach. Psychosomatic symptoms, psychiatric disorders, marital distress, alcoholism, drug dependence, juvenile offences, problems of adolescence, conduct problems and phobias. Qualities of marriage and family therapist. Contemporary marital therapies- psychoanalytic, communicative. Marital, behavioural and system theory approaches. Advanced techniques of marriage and family therapy. Future directions for marriage and family therapy- bridging research, theory and practices. Advances in clinical assessment, preventive and enrichment programmes.

Practical : Observational visits and screening families in need of therapy. Case studies in different areas of marriage and family therapy. Methods and techniques of marriage and family therapy.

**HD 512 Cross-Cultural Perspectives in Family Studies** **2+0** **Sem I**

Components of culture. Cultural influences on human development. Agents of cultural influences- school, family and other social groups. Interface between culture and family. Family in different cultures- parenthood, gender roles and issues in different cultures, socialization practices, status of women and care of elderly. Interpersonal communication patterns, conflict resolution, family crisis and adaptations. Cross-cultural variations and their impact on families. Legal provisions and emerging cultural trends. Research trends in cross-cultural family studies and methodological issues.

**HD 601 Adulthood and Ageing** **2+0** **Sem II**

Adulthood- theoretical perspectives in adult development, transition to adulthood, stages of adulthood. Issues and adjustment related to occupation, self and family, supportive services. Theoretical perspectives on developmental changes, biological health, cognitive changes and adjustment. Contemporary issues in ageing. Changing family issues and empty nest stage. Death, dying and bereavement. Attitude towards death, grief and bereavement.

**HD 602 Advances in Family Studies** **3+0** **Sem II**

Different approaches to family studies- nature and importance of conceptual framework, institutional framework, structural-functional framework, developmental framework and interactional framework. Sociological viewpoint of family by Talcott Parsons. Inter disciplinary approaches to family measurement. Psychological approaches of assessment in family. Psychiatric approach, interactive approach, measurement of marital roles and relationships, ethnographic approach and demographic approach. Ethics in family research. Current issues for research in Indian families. Changing roles of parents in parenting in contemporary society. Disorganized and reorganized families. Marital distress. Alternate family patterns- single parent families, female headed households, dual career families, sibling families etc. Theoretical developments in marital and family therapy, schools for family therapy, structured, strategic, experimental family and integrated family therapy. Critical evaluation of national policies and programmes towards family welfare in India.

**HD 603 Ecology of Human Development** **2+0** **Sem I**

Bio-ecological model and developmental assessment. Socio-cultural and sub-cultural differences in child's environment and its effect on childrearing practices and development. Terrain, climatic, demographic and economic factors and their effect on human development. Socio-political, legal systems and policies, religion and caste systems, minority and deprived states and their effects on human development. Community support and its value for human development. Environmental aspects - overcrowding, socio-cultural imbalances and their impact on development. Impact of time factor on development

**HD 604 Advances in Mental Health** **2+0** **Sem I**

Recent issues and concepts of mental health. Types and etiology of various behavioural disorders and maladjustments- psychosomatic problems, anxiety disorders, mood disorders, schizophrenia and multiple-personality disorders. Models of human nature- biological model, behavioural model, cognitive model, psychoanalytic model and their implications. Strategies of behaviour modification- behaviour therapy, cognitive

therapy, psycho therapy and family therapy. Contemporary intervention techniques. Programmes and policies for the promotion of mental health in India.

**HD 605 Advanced Strategies in Developmental Intervention** **2+1** **Sem I**

Current orientation towards intervention. Vulnerable groups for intervention and their characteristics. Need assessment for intervention. Contemporary issues and current trends in intervention. Multi disciplinary approach to intervention. Intervention strategies, approaches and methods. Developing network with agencies. Generating resources. Role of family and community in implementation of intervention programmes. Evaluation of intervention programmes.

Practical : Identification of groups for intervention and assessment. Selection of groups and conducting need assessment. Development of intervention packages. Conducting intervention for the selected group with developed intervention packages. Field testing of developed intervention packages. Evaluation of available intervention packages.

**HD 606 Programme Development for Vulnerable Families** **2+1** **Sem. II**

Concept of developmental programmes. Types of projects- development and research projects. Scientific values and professional ethics. Identifying research needs/ thrust areas in human development. Vulnerable population- AIDS, drug addiction, prostitutes, delinquents, street children, disadvantaged, hospitalized, destitute women and children, abused children, women and senior citizens. Developing Programmes- project proposal - steps/ process involved, principles of project design, aspects of appraisal, basic considerations risks and returns. Donors/ funding agencies and their types- national and international donors, public and private donors, their thrust, expectations and guidelines. Project sustainability- factors, components and action plan.

Practical: Identifying vulnerable population in rural and urban areas. Developing programmes for the rehabilitation, execution and evaluation of programmes. Learning to use selected PRA techniques - focus group discussions, interviews, transit walk, social mapping, time line, executing the use of each technique and appraisal. Developing a concept note and a pre-project proposal and appraisal. Developing a project - planning, implementing and proposing, monitoring and evaluating strategies using appropriate techniques. Programme Evaluation and Review Technique (PERT). Dissemination / publishing of success stories and popular articles.

**HD 607 Socio-Cultural Perspectives in Human Development** **2+0** **Sem II**

Socialization and acculturation - socialization, multi-culturalism, social assimilation and issues associated with socialization processes. Prosocial and antisocial behaviour. Morality, aggression and delinquency. Discipline and punishment. Influence of child's micro and macro environment - parent child interactions, changing family forms, child abuse, social discrimination, changes in socio-economic aspects, technological developments, changes in agricultural systems, wars and natural disasters, child and family welfare concerns.

**HD 591 Seminar**

**HD 600 Master's Research**

**HD 700 Ph.D Research**

## HOME SCIENCE EXTENSION AND COMMUNICATION MANAGEMENT

### PROGRAMMES

1. M.Sc.
2. Ph.D

### COURSE REQUIREMENTS

#### M.Sc.

Field of Specialization: Home Science Extension, Communication Management

Required courses HECM 501, HECM 502, HECM 503, HECM 504, HECM 505.

Supporting courses Stat 421, PGS 501 and other courses from subject matter field (other than Minor) relating to area of special interest and research problem.

Minor fields Food and Nutrition, Family Resource Management, Human Development, Journalism, Languages & Culture, Economics, Sociology, Business Management or any other as approved by the Dean Postgraduate Studies.

Deficiency courses for students with elective other than Home Science Extension & Communication Management/ Home Science Extension Education. 9-12 credit hours of atleast 400 series courses as recommended by the Student's Advisory Committee and approved by the Dean, Postgraduate Studies

#### Ph.D

Field of specialization Home Science Extension, Communication Management.

Required courses HECM 601, HECM 602, HECM 603, HECM 604

Supporting courses Courses from subject matter fields (other than Minor) relating to area of special interest and research problem.

Minor fields Food and Nutrition, Family Resource Management, Human Development, Journalism, Languages & Culture, Economics, Sociology , Business Management or any other as approved by Dean Postgraduate Studies.

Deficiency courses for students with MSc. (Home Science) in a discipline other than Home Science Extension & Communication Management/ Home Science Extension Education. HECM 501, HECM 502, HECM 503, HECM 504, HECM 505, and other courses as recommended by Student's Advisory Committee and approved by the Dean, Postgraduate Studies

## DESCRIPTION OF COURSE CONTENTS

### Undergraduate Courses

<b>HECM 91 Orientation to Higher Education</b>	<b>2+0 (NC)</b>	<b>Sem I</b>
<p>Genesis and growth of higher education in India. Difference between school and college education. Indian Council of Agricultural Research (ICAR) and its components. Mandate and organizational set up of Punjab Agricultural University and College of Home Science. Educational Programmes and co-curricular activities of the University. Teaching-learning system of Punjab Agricultural University. Understanding the semester system. Use of library and formation of study habits. Monitoring and evaluating students' performance: examinations, assignments and practicals. Educational programmes of Punjab Agricultural University.</p>		
<b>HECM 92 Introduction to Rural Development</b>	<b>1+1</b>	<b>Sem II</b>
<p>Changing nature of issues and challenges faced by rural women and rural communities. Introduction, meaning and importance of rural development. Rural development policy in India. On-going rural development programmes. Roles and responsibilities of grass root functionaries operating under different development schemes of the Government. Rural organizations, industries and cooperatives involved in rural development. Role of NGOs in rural development. Home Science education for the upliftment of rural families.</p> <p>Practical: To explore issues related to rural life and culture and address challenges faced by rural women. To work on problem based projects using interdisciplinary and community oriented approaches to solve rural problems.</p>		
<b>HECM 93 Interpersonal and Soft Skills</b>	<b>1+2</b>	<b>Sem II</b>
<p>Interpersonal skills: meaning, nature, scope and types. Soft skills: friendliness, cooperation, optimism, conscientiousness, versatility, empathy, credibility, reliability etc. Developing critical thinking. Improving personal habits and bringing attitudinal changes. Academic skills: problem solving, listening, reading, writing, non-verbal, feedback skills and efficiency and effectiveness. Team building, confidence building, rapport building and conflict resolving skills.</p> <p>Practical: Learning exercises in developing behavioural competencies through soft skills. Speaking skills: delivering structural talk, persuasive talk/speech, organizing discussion sessions, proposing vote of thanks, introducing self and others, holding debates, developing questioning skills, interactional exercises, showing gratitude etc. Reading skills: reading books/chapters/ newspapers critically. Writing skills: writing letters/ resume/report/assignment/magazine article etc. Planning skills: organizing a meeting and holding a brainstorming session. Other skills: participative learning exercises, interview skills, feedback exercises. Confidence building and team building exercises and games on developing good personal habits.</p>		
<b>HECM 101 Home Science Extension and Rural Development</b>	<b>2+0</b>	<b>Sem I</b>
<p>Home Science education- meaning, philosophy, need, objectives and scope. Historical development of Home Science education in India. Structure and areas of Home Science. Place of Home Science in State Agricultural Universities and Conventional Universities. Professional, vocational and self-employment opportunities in Home Science. Extension Education- concept, need, importance, philosophy, principles, objectives, approaches and feedback (with special reference to Home Science). Concept and need of rural development. Role of extension education in rural development. Constraints in rural development. Five Year Plans in context to rural development. Panchayati Raj institutions-concept, structure and functions. Role of Indian Council of Agricultural Research, State Agricultural Universities and Non Government Organizations in rural development.</p>		
<b>HECM 102 Instructional Technology</b>	<b>1+2</b>	<b>Sem. II</b>
<p>Concept, meaning and principles of teaching and learning. Teaching-learning process. Instructional technology- meaning, characteristics, principles, classification, uses and approaches. Instructional strategies/techniques/methods- classification, uses and limitations. Improving communication through</p>		

effective instructional strategies/techniques. Communication through instructional media- meaning, importance, classification and functions. Non projected media- charts, posters, flash cards, displays, leaflets, folders and pamphlets. Projected media- transparencies and slides. Electronic media- radio, television, internet, e-mail. Folk media- meaning, importance and types. Lesson planning and evaluation of teaching-learning.

Practical: Familiarization with accessories for preparing instructional materials. Preparation of instructional aids and traditional media- charts, posters, flash cards, displays, transparencies and puppets. Handling and use of projectors i.e. LCD, slide projector and overhead projector. Instructional planning- planning two lessons with instructional methods and aids. Experience in delivering instructions and evaluating performance of student- teacher based on planned lessons.

**HECM 201 Communication and Adoption 3+0 Sem I**

Communication- concept, origin, meaning, nature, purpose, importance and elements. Communication barriers and ways to overcome these. Meaning, classification and selection of communication media and methods for diffusing Home Science technologies. Diffusion-concept and elements. Meaning of related terms- social system, social change, innovation, invention, innovation-decision process, change proneness, change agent and opinion leaders. Adoption-meaning, concept, rate of adoption, adoption process, discontinuance, over adoption. Types of innovation decisions. Characteristics of innovations with special reference to homestead technologies. Stages of innovation decision process- knowledge, persuasion, decision implementation, confirmation. Adopter categories-innovators, early adopters, early majority, late majority, laggards. Models of diffusion. Rate of adoption and factors affecting adoption. Consequences of adoption. Constraints in diffusion and adoption of technologies. Opinion leadership and diffusion networks.

**HECM 202 Extension Training Management 2+1 Sem II**

Extension training- concept, definition, aims, importance, nature, principles and associated psychological concepts. Training needs- meaning, importance, types and techniques of needs assessment. Different types and phases of training. Learning process in training programmes. Principles and characteristics of adult learners. Factors affecting adult learning. Different methods for training rural women and field functionaries. Designing training programme in Home Science- course planning and preparation, training objectives, course content, course design. Qualities of a good trainer- communication skills, training skills, motivational skills and handling difficult situations. Different stakeholders in training and their responsibilities. Management of extension training- monitoring and evaluation of training programme. Follow up of training programme. Management of group behaviour and capacity building through training. Important training institutions in India.

Practical: Visit to the training institutions to observe on- going trainings. Assessment of training needs of rural women. Development of training package based on needs in any area of Home Science. Experience in delivering the training package through various methods and techniques of training. Evaluating the impact of instructional delivery through the developed training package.

**HECM 211 Interpersonal and Organizational Skills 2+1 Sem II**

(For the students of BSc. (Hons.) Fashion Designing)

Primary concepts associated with interpersonal and organizational communication. Importance and role of communication in management. Forms of interpersonal communication, forms of organization communication. Factors influencing organizational communication. Formal information system. Informal communication in organization. Communication networks-the grapevine, wandering around etc. Non verbal communication. Use of communication skills. Negotiating for conflict management. Guidelines for negotiation. Negotiation processes-integrative process and distributive process. Managing organizational communication- Overcoming barriers to communication. Trust and confidence building. Assertive communication, relationship styles, emotions and attitudes in communication. Improving communication effectiveness - individual skills and organizational skills. Technology and new communication policies in an organization.

Practical: Development of soft skills. Formal and Informal organizational communication. Development of negotiation skills. Assertive communication. Field visit.

**HECM 301 Programme Planning and Evaluation** **2+2** **Sem I**

Programme planning- concept, meaning, importance, objectives and principles. Steps in programme planning. Environment building- concept, meaning, importance and techniques. Participatory Rural Appraisal (PRA)- concept and techniques. Leader and leadership- meaning, qualities and roles. Types of leaders. Identification and training of leaders. Programme implementation- involvement of local leaders, local bodies, organizations and extension agencies. Constraints in implementation of programme at grass root level and coping methods. Monitoring and evaluation of extension programme- concept, meaning, importance, types and techniques. Technicalities of report writing.

Practical: Establishing rapport with rural families. Acquaintance with ongoing development programmes in the adopted village. Developing tools for data collection. Conducting village and household survey. Situation analysis- participatory observation through transect walk, mapping and other PRA techniques. Planning, implementing and evaluating a need based programme in an adopted village. Preparing report and making a power point presentation based on programme activity.

**HECM 302 Communication Management** **2+1** **Sem II**

Concept and functions of communication. Types of communication- written, verbal, nonverbal. Forms of communication- interpersonal and intrapersonal communication. Levels of communication- horizontal, upward, downward. Semantics in scientific communication. Communication efficiency and effectiveness. Communication process and techniques. Theories & models of communication. Barriers of communication. Communication competencies. Message distortion. Role of communication management in an organization. Organizational climate and culture. Characteristics and concepts of effective office communication. Management information system- communication planning, information distribution, performance reporting and communication management outputs. Management of interpersonal behaviour in an organization. Planning an effective communication strategy in an organization.

Practical: Learning experiences in developing listening, speaking and writing skills. Simulations and games in communication distortion. Learning exercises in measuring effectiveness of different communication performances in formal and field situations.

**HECM 303 Mass Media Communication** **2+2** **Sem II**

An overview of mass media communication. Communication media and technologies- print, radio, television, audio and video CDs, videotext and teletext, satellite communication, computer based instructions. Planning an effective communication strategy- development of communication mode, factors affecting communication fidelity, adoption process, communication patterns in village. Message treatment for mass communication. Print media-overview of trends, role and principles related to print media. Use and impact of technology in print media. Electronic media- concept and expansion of electronic media. Role of T.V and Radio in rural development. Modes of T.V. and radio programme presentation. Writing and editing scripts for different modes of T.V. and radio programmes. Legal issues related to communication through mass media.

Practical: Writing scripts for a T.V. and radio programme. Gathering, visualizing and field reporting of home and farm based news, issues and events both for print and electronic media. Working on a lab journal by application of writing, editing and proof reading skills and final production. Visit to press, radio and T.V. station to know their structure and functioning.

**HECM 304 Photography** **1+2** **Sem II**

(In collaboration with Department of Agricultural Journalism, Languages & Culture)

Concept of photography. Principles and types of photography. Importance, impact and composition of photographs. Picture elements- shape, form, colour, texture, space and pattern. Tools of photography- Cameras, lenses and accessories. Qualities of a good photograph. Photo features. Understanding different types of cameras and their care and handling. Traditional versus digital photography. Techniques and processing of photography. Photo editing and caption writing.

Practical: Handling and use of cameras. Techniques of photography using digital camera and computer. Basic principles of photography. Picture editing in photoshop. Exposing, developing, printing, caption writing etc. Digital editing. Writing and reporting for photo features, exhibitions and displays etc.

- HECM 305 Designing Instructional Media** **1+3** **Sem II**  
 Instructional design- An overview of the field of Instructional design. Models of Instructional Design - ADDIE Model, rapid prototyping, instructional development learning system and other models. Principles of Instructional designing. Learner, Content and context analyses. Formulation of instructional objectives based on Bloom's taxonomy. Psychological basis of learning. Designing instructions for formal and non-formal learners. Designing instructions for print media. Desktop publishing software for print media. Field testing of developed instructional material- concept, importance and development of rubrics for measuring their effectiveness.  
 Practical: Operation and use of application software like MS Office, Power Point, Corel Draw/Illustrator, Photoshop, Page Maker, Graphics, Animation, Desktop Publishing etc. Preparing self instructional materials/ modules. Preparing computer aided instructional aids-leaflets, handouts, posters, booklets, flipbooks and slides. Field testing of any one developed aid. Designing web page for advertisement.
- HECM 312 Fashion Photography** **1+2** **Sem I**  
 (For the students of BSc.(Hons.) Fashion Designing)  
 Introduction to photography as a technique and art. Light- the source of photography. Principles of composition. Understanding fashion photography and the fashion industry. Fashion styling. Studio lighting. Shooting with models and makeup artists. Image editing and retouching/ manipulation techniques. Portfolio presentation.  
 Practical: Basic principles of photography. Camera and camera types. Main controls on a camera. Film and digital image sensor. Exposure. Depth of field. Lighting. Image editing / image editing software. Preparation of portfolio.
- HECM 401 Instructional Video Production** **1+3** **Sem I**  
 Concept and principles of video production. Use of video for instructional and extension purposes. Use of video in mass communication. Understanding video camera and its parts. Different video formats and accessories. Steps in video production- topic selection and review of literature, planning for scripting, recording and editing. Concept of participatory video for improving quality of life in rural areas.  
 Practical: Familiarization and handling of video and associated accessories. Learning exercises in changing and loading battery pack, inserting video cassette, focusing, zooming and shooting. Hands on experiences with video softwares. Script writing. Field experience in video shooting. Video editing using different formats. Evaluation of participatory video programme to empower underprivileged people in rural areas.
- HECM 402 Public Relations and Social Marketing** **2+1** **Sem I**  
 Public relations- concept, objectives, tools, advantages and disadvantages. Relevance of public relations in changing scenario including public, private and government sectors. Public relations- laws and ethics. Concept, need and philosophy of social marketing. Marketing versus sale. Principles of social marketing. Importance of social marketing in development. Social marketing requirements and changing Indian marketing situations. Marketing oriented strategic planning- scanning the marketing environment, analyzing the consumer market and buyer behavior, managing marketing channels etc.  
 Practical: Field observations and experiences in social marketing. Focus group discussions with groups/ community. Practical exercise on designing and pricing social products. Scanning social market situations- strategies and constraints. Controlling and evaluating social marketing strategy. Written reporting, oral presentations and discussions based on observation and experiences collected in social marketing.
- HECM 403 Training and Human Resource Development** **1+2** **Sem I**  
 Concept, need and importance of training for Human Resource Development (HRD) in context to Home Science. Identifying training needs for change. Concept, background and dimensions of HRD. Human resources and economic development. Strategic interventions-health, education, environment, empowerment etc. Decentralizing and enhancing participation. Facilitation skills in training. Different training methods. Designing, executing and evaluating training programmes. Women and leadership. Leadership aesthetics. Entrepreneurship as a dimension of HRD. Management training and HRD.  
 Practical: Planning and practicing different training methods. Conducting case studies of selected ongoing training programmes. Designing and conducting short training programmes for Human Resource Development (HRD). Developing and use of evaluation tools for measuring learning outcomes.



<b>HECM 404 Project Management</b>	<b>1+2</b>	<b>Sem I</b>
<p>Overview and basics of project management. Terminology associated with project management. Project management- processes and initiation. Project planning and project lifecycle-project objectives, stakeholders analysis, market and demand analysis, environmental appraisal of projects, cost benefit analysis, work breakdown, (Strengths Weaknesses Opportunities and Threats) analysis, CPM (Critical Path Method), PERT(Project Evaluation Review Technique). Budgeting. Planning baselines. Project tracking and reporting. Project human resource management and communication skills. Project closure analysis- measuring performance and productivity analysis. Code of ethics.</p> <p>Practical: Baseline survey to collect techno-economic information for project preparation feasibility report. Identification of clientele for the project. Planning and development of a viable project. Visit to different banks and other financing institutions. Field experience in tools and techniques needed to manage an enterprise i.e. integration management, scope management, cost management, quality management, communication management, procurement management etc. and its reporting. Studying new schemes for financing home related projects.</p>		
<b>HECM 405 Entrepreneurship Development for Rural Families</b>	<b>2+2</b>	<b>Sem I</b>
<p>Meaning, definitions, need and importance of entrepreneurship development. Motivating and promoting entrepreneurship among farm families. Meaning, characteristics, functions and classification of entrepreneurs. Attributes of women entrepreneurs. Process of initiating enterprise. Type of enterprises-their merits and demerits. Government policies and schemes for entrepreneurship development among farm women. Phases of entrepreneurship development- stimulation, support and sustenance. Stimulation phase-conceptualization of idea, exposure to different home based enterprises, introduction to clustering, identification and selection of enterprise, market survey to collect techno-economic information and preparation of project feasibility report. Support phase- regularization of unit, arranging resources (physical, human, finance and raw materials) for developing enterprise. Management practices in various functional areas; finance, production and marketing the product. Sustaining phase-skill in quality control, quality testing, and diversification of product and value addition. Entrepreneurial motivation. Competencies required in women entrepreneurs. Marketing management.</p> <p>Practical: Visit to a small scale and cottage industry. Study of one enterprise in detail. Preparing a project proposal for submitting to a funding agency. Interaction with successful women entrepreneurs.</p>		
<b>HECM 421 Internship I - Entrepreneurial Placement/In Plant Training</b>	<b>0+2</b>	<b>Sem II</b>
<p>Acquaintance with the functioning of Doordarshan Kendra and Radio Station, programme production, training including familiarity with the working of studio, Sync Studio, compeering, script writing, story boarding, video shooting, editing and synchronization of sound and video. Experience in designing and integrating interface elements. Placement of students in training centers/ KVKs and Publishing Houses/ Printing Presses to get experience in Human Resource Development and Desk top Publishing.</p>		
<b>HECM 422 Internship II - Project Report and Presentation</b>	<b>0+4 NC</b>	<b>Sem II</b>
<p>Preparation of project proposal for establishing multimedia production unit/ printing unit/ training centre/ video production centre complete with resource mobilization, finances, infrastructure and other facilities. Preparation of report and power point presentation of the same.</p>		
<b>HECM 423 Internship-III Experiential Learning in Multimedia Production</b>	<b>0+8</b>	<b>Sem II</b>
<p>Operational handling of CD-Writer and multimedia kit. Preparing for multimedia application production-Planning the components of a multimedia application. Familiarity in handling various softwares, flash M.X., Adobe Premier Pro CS, dream weaver, pinnacle sound forge etc. Designing the interface elements and their integration into a multimedia application. Product testing, revision and documentation. Packaging of a multimedia application in the form of a CD Rom. Use of LCD panel projector and interactive board for presentation of the developed application.</p>		
<b>HECM 431 Rural Awareness Work Experience in Home Science (RAWE)</b>	<b>0+8</b>	<b>Sem II</b>
<p>Orientation to village institutions. Village profiling. Bench mark survey for need assessment using quantitative and participatory approaches. Developing and implementing various instructional media and resources for training and capacity building. Interventions to improve nutritional status of rural families. Need based</p>		

intervention on nutritional health and hygiene; resource management; consumer empowerment; family counselling. Purchase, care and maintenance of clothes and home textiles. Organizing campaigns to address rural issues. Skill development for entrepreneurship. Mobilizing women to form SHGs. Development of marketing linkages. Documentation of ITK. Organization of Farm Women Fair.

## Postgraduate Courses

### **HECM501/Ext 505/Econ. 506/Soc. 506 Research Methodology for Social Sciences 2+1 Sem I**

Importance and scope of research in social sciences. Concept and characteristics of social research. Types of research- Fundamental vs. Applied. Concept of researchable problem - research prioritization, research process. Hypothesis - meaning, characteristics, types and testing. Review of literature. Development of theoretical orientation of the research problem. Concept, construct, variables and their measurement. Sampling design, sampling error and methods of sampling. Research design and techniques. Types of data collection tools and testing their reliability and validity. Scaling techniques. Coding, editing, tabulation and validation of data. Tools of data analysis. Statistical package for social sciences, interpretation of results, preparing research report / thesis. Writing of research articles. Universal procedures for preparation of bibliography.

Practical: Selection and formulation of research problem, objectives and hypothesis. Selection of variables and their operationalisation. Developing conceptual framework of research. Development of data collection tools and measuring their validity and reliability. Data processing, tabulation and analysis. Formulation of secondary tables. Writing of thesis and research articles. Presentation of reports.

### **HECM502/Ext. 502 Development Communication and Information Management 2+1 Sem II**

Communication- concept, meaning, importance, models, theories and types. Communication fidelity, credibility, empathy, feedback and factors affecting communication process. Communication skills. Characteristics and role of key communicators in development. Expert system in selected enterprises. Role of ICT in communication. Social networks and development. Effective oral communication, public speaking, non-verbal communication, writing skills, soft skills. Participative communication - meaning, importance, process and determinants. Development Communication- concept, nature and significance. Recent advances in communication-print and electronic, internet, e-mail, fax, mobile, interactive video and teleconferencing, computer and computer networking (PAN, LAN, CAN, MAN, WAN), AGRINET, e-Governance.

Practical: Practical exercises in oral and written communication. Planning and use of different communication approaches. Practical hands on experience in recent advances in print, electronic and new media.

### **HECM 503/Ext. 503 Participatory Programme Management 1+1 Sem II**

Conceptual framework of extension programme planning - key concepts and importance in planned change. Participatory planning - concept, importance, process. Techniques of participatory planning-RRA, PRA and PLA and their application in extension. Approaches of participatory planning - cooperative, democratic, bottom up and down. Project management techniques - PERT, CPM, SWOT analysis, obtaining technical and monetary support from GOs and NGOs. Importance and ways of people's participation in programme planning. Concept and formation of women SHGs. Implementation and evaluation - concept, importance and techniques.

Practical: Application of PRA methods. Critical review of evaluation studies related with women and rural development programmes. Critical analysis of monitoring and evaluation of developmental programmes. Preparation and implementation of home improvement work plans. Critical evaluation of work plan with specific evaluation techniques. Organizing and evaluating programmes related to women and children at village level.

### **HECM 504 Media Production and Management 2+1 Sem II**

Production technology, process and skills. Process of producing newspaper, magazine and other printed literature-leaflets, brochures, newsletters, bulletins, booklets, posters etc. Concept of media and its role in changing communication scenario. Multimedia - concept and evolution of multimedia. Fundamentals of making a multi media programme-text, graphics, audio etc. Process of producing radio, television and

multimedia programmes. Different programme formats for radio and television. Planning of selected media products-print and electronic. Paper- kinds of paper, sizes, colour theory for print and multi media. Ownership patterns of various media. Economics of media organizations. Organizational structures- different departments, production planning, lay out consideration, marketing planning, registration and liaison with government departments. Understanding regulatory mechanisms for newspapers, radio and television. Co-ordination, motivation, decision making and control.

Practical: Visit to media industries and marketing agencies. Production of selected media products - print and electronic. Study of one multimedia enterprise. Preparing a project proposal for submitting to a funding agency.

**HECM 505 Global Extension Systems 3+0 Sem. I**

Extension systems in India. Extension efforts after independence. Area and target oriented programmes- IAAP, T & V, Special programmes for poor and women and children, IRDP, TRYSEM, DW CRA, JRY, IAY, SGSY, SGRY. Adult literacy programme, National literacy mission, Post literacy activities. Support structures and their functions- DRDA, NREGP, Central Social Welfare Board, State Social Welfare Board, NABARD. National level voluntary agencies- CAPART and KVIC. ICAR extension systems- KVK, IVLP, ATIC, NATP, NAIP, AICRP. Role of SAUs in rural development. Role of international organizations in rural development. Review of five year plans in India. Privatization of extension services- scope and limitations. Comparative extension system of selected developed and developing countries-USA, UK, Israel, China, Pakistan, Japan and Brazil with brief history, approaches, organizational structure, linkages with research and extension methods. Its comparative analysis with Indian extension system.

**HECM 506/Ext. 511 Gender Sensitization for Empowerment 2+0 Sem I**

Gender sensitization-meaning, need and importance of empowering women. Gender in community diversity and its implication for empowerment. Gender perspectives in development of women, social characteristics, desegregated roles, responsibilities, resources, constraints and opportunities. Economical, educational and anthropological parameters in gender perspectives. Gender dimensions and methodologies for empowerment. Gender analysis framework- context, activities, resources, tools and programme action profile. Training aids for gender sensitization. Empowerment through gender specific technologies, Household technology interface. Socio-cultural interface and women as consumers of technologies. Gender issues and development-health and nutrition, violence, governance and educational media.

**HECM 507 Extension Management 2+0 Sem I**

Concept of administration and management. Principles and theories of administration and management. Techniques of participatory planning- RRA, PRA and PLA and their application in extension. Approaches of participatory planning- cooperative, democratic, bottom up and down. Schools of management thoughts. Meaning, nature and scope of extension management. Scientific management movement. Process of management- planning, organizing, staffing, directing, communicating, co-ordination, controlling, monitoring and evaluation. Organizational climate, behaviour, development. Management by Objectives (MBO). Qualities and functions of extension personnel. Extension system of ICAR, SAUs and State departments. Problems and issues of extension management in India. Critical appraisal of management of various extension organizations. Community conflicts and its resolution.

**HECM 508 Dynamics of Training 1+1 Sem II**

Training and its importance in developing human resources and rural areas. Types of training and the conceptual model of training process. Group dynamics-origin, concept, issues and theories. Groups and group membership- their role in training. Theories of training. Roles, styles, needs and influence of trainers. Stakeholders in training and their responsibilities. Participatory training methods. Experiential Learning Cycle (ELC)- concept and types. Designing, management and delivery of training programme- its monitoring, evaluation and impact assessment. Government policies for development of women and children as resources.

Practical: Examining the need for training. Visiting and studying the nature and functioning of training institutes, practice of selected training methods. Planning, organizing and evaluation of training programmes for different clientele.

**HECM 509 Organizational Communication and Event Management** **2+0** **Sem II**

Introduction to organizational communication. Communication theories. Team based communication in organizations. Leadership management communication. Goal setting and communication by objectives. Developing critical organizational communication competencies, negotiation and conflict resolution. Communication distortion-factors, dimensions and theories. Communicating with public. Advertising as a communication tool, interviewing and surveying, conducting meetings. Making presentations. Structuring the message. Values and ethics in communication. Professional communication management. Event Management- concept, objective, need, types and structures of events; priority of event management, process of organizing an event, effective use of resources in context to vision, mission and roles, effective goal planning strategies, planning events- press meets/conferences/exhibition, organizing media tours, evaluating public opinion.

**HECM 510 Educational Technology** **2+1** **Sem I**

Teaching- learning process. Systems approach to design teaching-learning. Maxims of teaching. Stages, forms and levels of teaching and learning. Concept, role, meaning, nature, dimensions, functions, scope and trends in educational technology. Curriculum design and development. Designing instructions-formulation of objectives. Teaching-Learning strategies- microteaching, programmed instruction, simulation, team teaching, experiential learning. Modularized instruction- fundamentals, process, formulation of objectives, selection of media, field testing and evaluation of a module. Genesis and trends in modern education, management of formal and non formal education in India. Vocationalization of education. Distance education, guidance and counseling. Evaluation of Instructional effectiveness. Construction and evaluation of criterion reference based test, reliability and validity of test items.

Practical: Designing a course curriculum. Preparation of moduled instructions. Preparation and use of different instructional media/material. Classroom delivery of instructions, using different teaching- learning strategies. Construction of competency/criterion based test and seminar organization.

**HECM 511 ICT and New Media** **0+2** **Sem II**

Multi media and emerging technologies. Video on- demand, internet, radio and web television. Impact of new media on traditional media. Writing for general Internet sites, online and net newspapers and editions, blogs, search engines, video logs, citizen journalism, unique features of web language, web pages, home pages, design and layout. Writing on specialized area on the web. Evaluation of e-journals- advantages and disadvantages. Web site designing concept, HTML, interactive web animation, animated graphics, designing interactive elements, sound addition, web visual editor, creation and editing.

**HECM 601 Recent Trends in Extension and Communication** **2+0** **Sem II**

Changing concepts and emerging issues in extension - rational and realities, recent extension strategies for rural upliftment, future scenario of extension. Recent trends in technology transfer-need of identification and documentation of appropriate homestead technologies. Assessment and refinement of technologies. Importance and relevance of indigenous technical knowledge system. Integration of ITK with formal research. Emerging issues in communication- understanding communication in global perspective. Role of mass media for rural audience with special emphasis on women. New communication technologies, computer assisted instruction, latest in print technology. Enhancing learning through communication intervention. Visual communication - A psychological perspective. Distance learning. Cyber extension- definition, scope, advantages, limitations and application in Home Science.

**HECM 602/Ext. 602 Scaling Techniques for Behavioural Research** **2+1** **Sem II**

Meaning, types, principles and steps of scaling. Techniques of attitude scale construction- Paired comparison, Equal appearing intervals, Successive intervals, Summated ratings, Scalogram analysis, Scale discrimination technique. Sociometric technique. Q-sort technique. Semantic differential technique. Projective and semi- projective techniques. Critical incident technique. Reliability and validity of scales. Knowledge measurement. Participatory tools and techniques in behavioural research. Data collection and evaluation. Impact analysis. E-data collection and evaluation. Use of computer in analysis of data.

Practical: Practice in construction of different scales and their use under different situations. Testing reliability and validity of constructed scales. Application of semi-projective and projective techniques. Practicing participatory tools and techniques. Use of e-data collection methods. Review of previous studies.

<b>HECM 603 Managerial Skills for Extension Professionals</b>	<b>2+0</b>	<b>Sem I</b>
<p>Conceptualization of management process and its major functions. Management problems in extension organizations. Managerial skills - nature and importance for extension professionals. Skills in effective management of extension and rural development organizations. Strategic planning- importance, steps and techniques. Creative problem solving techniques. Stress management practices. Total Quality Management (TQM), Time management practices, Development of Management Information System for extension organizations at various levels. Work motivation. Organizational climate. Resource management- concept and methods. Team building- process and strategies at organizational and village levels. Mobilization and empowerment skills- concept and strategies in mobilization, concretization and empowerment of rural people</p>		
<b>HECM 604 Monitoring, Evaluation and Impact Assessment</b>	<b>2+0</b>	<b>Sem II</b>
<p>Monitoring- meaning and theoretical concepts, components of project monitoring, performance appraisal standards and sustainability, approaches to participatory impact monitoring. Evaluation- meaning and theoretical concepts, criteria, steps, models and standards of evaluation, planning evaluation process, design of evaluation studies and methods of data collection. Designing evaluation instruments, analysis and interpretation of evaluation data, cost effectiveness and cost benefit analysis, managing evaluation projects and writing evaluation reports, reporting and meta- evaluation (evaluation of evaluation), utilization of evaluation results. Impact assessment techniques- concepts and process, levels and approaches of impact assessment in development programme. Domains, types, criteria and indicators of impacts, impact monitoring, methods and designs, impact assessment, perception of partners, techniques of analysis of impact assessment, policy implication of impact assessment.</p>		
<b>HECM 605 Project Planning and Management</b>	<b>1+1</b>	<b>Sem I</b>
<p>(In collaboration with Deptt. of Economics and Sociology )</p> <p>Project management - Concept, process, types, project life cycle, project appraisal, feasibility analysis, techno- economic analysis, project design and network analysis, input analysis, financial analysis, social cost- benefit analysis and project appraisal. Project planning - criteria for selecting project, planning proposal, project review techniques, project estimation, managerial and other problems related to projects. Data management, monitoring and control of a project. Evaluation and reporting results. Thrust areas of Home Science research. Sources and priorities of funding agencies for Home Science research. National and International funding agencies for project. Research applications of Home Science in industry.</p> <p>Practical: Identifying researchable issues in Home Science- its analysis and presentation. Developing a need based research project. Identifying different funding institutions (minimum 4) for project submission. Submission of prepared research proposal for funding.</p>		
<b>HECM 606/Ext. 608 Advanced Media Management</b>	<b>2+1</b>	<b>Sem I</b>
<p>(In Collaboration with Department of Agril. Journalism, Languages and Culture)</p> <p>Principles of management- managing the media organization, managerial functions in the media organization, Introduction to media organization- history, functions , uses and theories of media. Editorial and circulation management- need and importance, marketing concept/circulation affecting factors, circulation manager, functions of circulation department, difficulties in circulation, promoting circulation. Need and concept of personnel management- role of personnel management, integration of interests, functions, human resource planning. Advertising management. Financial management- importance of finance, financial problems, production and printing management. Significant issues in the management of broadcast media-organizational structure of radio and television in public and private sectors. Concept, history and role of FM Radio, Community Radio and TV in transfer of technology. Functions of various departments and personnel-production, marketing, financial, managing the station/ channel.</p> <p>Practical: Visit to print, electronic and new media organizations to understand the designing, media development, organizational management, functions, problems etc.</p>		
<b>HECM 607 Advertising and Marketing Communication</b>	<b>1+1</b>	<b>Sem I</b>
<p>(In collaboration with Deptt. of Agricultural Journalism , Languages &amp; Culture)</p> <p>Evaluation and history of advertising, relevance of advertising in marketing. Classification of advertising,</p>		

various media for advertising, advertising writing process, law and ethics in advertising, socio-economic effects of advertising. Advertising agency, operations/ management, an understanding of key issues, strategies in advertising, government policy on advertising and management, Apex bodies in advertising. Advertising as a tool of marketing. Advertising campaigns and their role in marketing. Marketing communication - concept and functions, consumer behaviour and its various factors, recent trends in advertising and marketing.

Practical: Visit to advertising agencies, advertising layout techniques for newspaper, radio, posters, TV, hoardings and wall paintings. Case studies on institutional advertisement and advertisement campaigns.

**HECM 608 Dynamics of Group Behaviour**

**2+0**

**Sem II**

The science of Group Dynamics, meaning, characteristics, types and functions of groups. Stages and process of group formation, group norms and structure. Understanding individual, interpersonal and human behaviour and its different dimensions, recognizing points of view, feeling, perception and assumptions that intervene in inter-personal interactions. Group dynamics- cooperation, competition, communication, group pressure, group cohesiveness, leadership etc. Managing group- team building, conflict management, stress management, active listening and feedback. Achieving cooperative group structure.

**HECM 609 Sustainable Livelihood Systems**

**2+0**

**Sem II**

Holistic and multidisciplinary exposure to the understanding of concepts, processes and relationships among agro-climatic and natural resources, production systems and livelihoods of rural/urban people. Resources- land, soil, climate, water and forests. The production systems- agriculture, horticulture, sericulture, forestry, animal husbandry and dairying, fisheries, non-farm activities, their linkages with the livelihoods of rural people. Food security and livelihood security. Sustainable development- concept and challenges, ecological, social and economic dimensions of sustainable development, people's participation and sustainability. Indicators of environmental sustainability, sustainable livelihood and quality of life.

**HECM 591 Seminar**

**HECM 600 Master's Research**

**HECM 700 Ph.D Research**

**SEMESTER-WISE STUDY PROGRAMME OF B.Sc. (Hons.) HOME SCIENCE -  
6 YEAR PROGRAMME**

**FIRST YEAR**

<b>SEM I</b>		<b>SEM II</b>	
Eng. 91	3(2+1)	Eng. 92	3(2+1)
Pbi. 91	3(2+1)	Pbi.92	3(2+1)
Chem. 91	4(3+1)	Phys. 91	4(3+1)
FRM 91	2(2+0)	Chem. 92	4(3+1)
FN 91	2(1+1)	HD 91	1(1+0)
HECM 91	2(2+0) NC	NSS/NSO/NCC	1(0+1)NC
NSS/NSO/NCC	1(0+1)NC		
<b>Total</b>	<b>10+4=14 + 3NC</b>	<b>Total</b>	<b>11+4=15 +1NC</b>

**SECOND YEAR**

<b>SEM I</b>		<b>SEM II</b>	
Phys. 92	4(3+1)	FRM 92	2(1+1)
Bot. 91	4(3+1)	Zoo. 93	4(3+1)
Zoo. 91	4(3+1)	HECM 92	2(1+1)
ATS 91	4(2+2)	Bot. 92	4(3+1)
NSS/NSO/NCC	1(0+1)NC	HECM 93	3(1+2)
		NSS/NSO/NCC	1(0+1)NC
<b>Total</b>	<b>11+5=16+1NC</b>	<b>Total</b>	<b>9+6=15 +1NC</b>

**THIRD YEAR**

<b>SEM I</b>		<b>SEM II</b>	
ATS 101	3(1+2)	ATS 102	3(2+1)
FN 101/N Diet. 101	3(2+1)	FN 102/N Diet. 102	3(3+0)
FRM 101	2(2+0)	FRM 103	2(1+1)
FRM 102	3(1+2)	HD 102	3(2+1)
HD 101	3(2+1)	HD 103	2(2+0)
HECM 101	2(2+0)	HECM 102	3(1+2)
		Math 106	2(2+0)NC
		CSE 101	2(0+2)
		HD 106	2(1+1)
<b>Total</b>	<b>10+6=16</b>	<b>Total</b>	<b>12+8=20 + 2NC</b>

**FOURTH YEAR**

<b>SEM I</b>		<b>SEM II</b>	
ATS 201	3(2+1)	ATS 202	3(1+2)
FN 201/N Diet. 105	3(1+2)	FN 202/N Diet. 106	3(2+1)
FRM 201	2(1+1)	FRM 202	3(1+2)
HD 201	3(2+1)	HD 202	2(2+0)
HECM 201	3(3+0)	HECM 202	3(2+1)
Chem. 102	3(2+1)	Eng. 102	2(1+1)
Zoo. 205	3(3+0)	Biochem. 202	3(2+1)
		Env. 301	3(3+0)
<b>Total</b>	<b>14+6=20</b>	<b>Total</b>	<b>14+9=23</b>

**FIFTH YEAR**

<b>SEM I</b>		<b>SEM II</b>	
ATS 301	3(1+2)	Specialization/Professional Courses	14-17
FN 301/N Diet. 201	3(2+1)	Supporting Courses	7-8
FRM 301	3(2+1)		
HD 301	2(2+0)		
HECM 301	4(2+2)		
Mgt. 424	2(2+0)		
Stat. 204	2(2+0)		
Educational Tour	1(NC)		
<b>Total</b>	<b>13+6=19+1NC</b>	<b>Total</b>	<b>21-25 (maximum of 24)</b>

**SIXTH YEAR**

<b>SEM I</b>		<b>SEM II</b>	
Specialization /Professional Courses	14-17	RAWE	0+8
Supporting Courses	4-5	Internship I	0+2
		Internship II	0+4 (NC)
		Internship III Experiential Learning	0+8
<b>Total</b>	<b>18-22</b>	<b>Total</b>	<b>0+18=18+4NC</b>



**1. Total package for B.Sc. (Hons.) H.Sc. 6-year degree programme:**

		Credit Hours
Basic Courses		65+2 NC
Core Courses		91+2(NC)
Special Core Course		02
Specialization/Professional		31
Supporting		12
Internship		14*
RAWE		08
NSS and Physical Education	NSS/NSO/NCC for 4 Semesters,	04(NC)
Educational Tour		01(NC)
<hr/>		
Total		232

Supporting courses will be from areas other than Specialization and of 400 series from departments within the College and of 300 series from departments outside the College.

\*Includes Internship I(0+2), Internship II (0+4NC) and Internship III (Experiential Learning for 0+8 credit hours).

**Educational Tour**

Visit to Home Science College; large scale Catering or Training Institutes/Hotels (five star), Preservation Units; Textile Mills, NIFT/NITRA/IIT; Ford Foundation Centre/School of Planning and Architecture/ National Building Organisation, Furniture Industry; Institute of Mass Communication/ Mass Communication Research Centre, Institute for Non-formal Education.

## COURSE CURRICULUM FOR B.Sc. (Hons.) HOME SCIENCE 6-YEAR PROGRAMME AFTER MATRICULATION

### BASIC COURSES

#### REQUIRED COURSES

##### 1. AGRICULTURE

1.	Env. 301	Environmental Science	3+0
2.	Ent. 303	Household and Kitchen Garden Entomology (Compulsory Supporting Course)	1+1
Total:			4+1

##### 2. AGRICULTURAL ENGINEERING AND TECHNOLOGY

1.	CSE 101	Introduction to Computer Applications	0+2
Total:			0+2

##### 3. BASIC SCIENCES AND HUMANITIES

1.	Eng. 91	English I	2+1
2.	Pbi.91	Punjabi I	2+1
3.	Chem. 91	Chemistry I	3+1
4.	Eng. 92	English II	2+1
5.	Pbi.92	Punjabi II	2+1
6.	Phys. 91	Physics I	3+1
7.	Chem. 92	Chemistry II	3+1
8.	Phys. 92	Physics II	3+1
9.	Bot. 91	Botany I	3+1
10.	Bot. 92	Botany II	3+1
11.	Zoo. 91	Elementary Zoology	3+1
12.	Zoo. 93	Human Biology	3+1
13.	Zoo. 205	Human Physiology	3+0
14.	Chem. 102	Introductory Organic Chemistry	2+1
15.	Math 106	Introductory Mathematics	(2+0) NC
15.	Biochem. 202	Introductory Biochemistry	2+1
16.	Eng. 102	Comprehension and Communication Skills in English	1+2
17.	Mgt. 424	Fundamentals of Marketing Management	2+0
18.	Stat. 204	Principles of Statistics	2+0
Total:			44+16+2NC

##### 4. HOME SCIENCE

1.	ATS 91	General Home Science	2+2
2.	ATS 101	Fundamentals of Clothing Construction	1+2
3.	ATS 102	Textile Science and Care	2+1
4.	ATS 201	Fundamentals of Weaving and Knitting	2+1
5.	ATS 202	Apparel Designing and Construction	1+2

6.	ATS 301	Introduction to Dyeing and Printing	1+2
7.	FN 91	Personality Development	1+1
8.	FN 101/N Diet. 101	Introduction to Foods	2+1
9.	FN 102/N Diet. 102	Fundamentals of Nutrition	3+0
10.	FN 201/N Diet. 105	Home Scale Food Preservation and Storage	1+2
11.	FN 202/N Diet. 106	Community Nutrition	2+1
12.	FN 301/N Diet. 201	Normal and Therapeutic Nutrition	2+1
13.	FRM 91	Elementary Environmental Sciences	2+0
14.	FRM 92	Appreciation of Fine Arts and Crafts	1+1
15.	FRM 101	Management of Family Resources	2+0
16.	FRM 102	Home Arts and Crafts	1+2
17.	FRM 103	Housing and Space Management	1+1
18.	FRM 201	Fundamentals of Art and Interior Enrichment	1+1
19.	FRM 202	Household Equipment	1+2
20.	FRM 301	Family Economics and Consumer Education	2+1
21.	HD 91	Introduction to Home Science Education	1+0
22.	HD 101	Development during Early Years	2+1
23.	HD 102	Early Childhood Education	2+1
24.	HD 103	Late Childhood and Adolescence	2+0
25.	HD 106*	Human Values in Education	1+1
26.	HD 201	Children with Special Needs	2+1
27.	HD 202	Dynamics of Marriage and Family	2+0
28.	HD 301	Adulthood and Ageing	2+0
29.	HECM 91	Orientation to Higher Education	2+0(NC)
30.	HECM 92	Introduction to Rural Development	1+1
31.	HECM 93	Interpersonal and Soft Skills	1+2
32.	HECM 101	Home Science Extension and Rural Development	2+0
33.	HECM 102	Instructional Technology	1+2
34.	HECM 201	Communication and Adoption	3+0
35.	HECM 202	Extension Training Management	2+1
36.	HECM 301	Programme Planning and Evaluation	2+2
Total			93(57 + 36)+2(NC)
<b>NCC/NSO/NSS</b>			
1.	NCC/NSO/NSS (Sem-I)		0+1 (NC)
2.	NCC/NSO/NSS (Sem-II)		0+1 (NC)
3.	NCC/NSO/NSS (Sem-III)		0+1 (NC)
4.	NCC/NSO/NSS (Sem-IV)		0+1 (NC)
5.	Educational Tour		0+1 (NC)

Total Credit Hour Requirements of B.Sc. (Hons) Home Science 6-Year Programme = 232

## Areas of Specialization in various Elective Programmes and package of courses for each

### APPAREL AND TEXTILE SCIENCE

(Apparel Production Management)

1.	ATS 302	Traditional Textiles of India	2+1	Sem. II
2.	ATS 303	Fundamentals of Fashion Illustrations	1+2	Sem. II
3.	ATS 304	Computer Aided Fashion Designing - I	0+3	Sem. II
4.	ATS 305	Draping and Pattern Making	0+3	Sem. II
5.	ATS 306	Structural Fabric Designing	1+2	Sem. II
6.	ATS 401	Apparel Manufacturing	1+2	Sem. I
7.	ATS 402	Traditional Costumes of India	2+1	Sem. I
8.	ATS 403	Computer Aided Fashion Designing - II	0+2	Sem. I
9.	ATS 404	Textile Decoration Techniques	0+2	Sem. I
10.	ATS 405	Textile Designing	0+3	Sem. I
11.	ATS 406	Fashion Merchandising	2+1	Sem. I
12.	ATS 421	Internship-I Entrepreneurial Placement/ Inplant Training	0+2	Sem. II
13.	ATS 422	Internship - II Project Report and Presentation	0+4(NC)	Sem. II
14.	ATS 423	Internship III - Experiential Learning in Apparel Manufacturing	0+8	Sem. II

### FOOD & NUTRITION

(Nutrition and Dietetics)

1.	FN 302/N Diet. 202	Nutrition for Special Groups	3+0	Sem. II
2.	FN 303/N Diet. 103	Food Hygiene and Sanitation	2+1	Sem. II
3.	FN 304	Bakery and Confectionery	1+3	Sem. II
4.	FN 305/N Diet. 204	Institutional Food Service Management	2+2	Sem. II
5.	FN 401	Catering Management	0+2	Sem. I
6.	FN 402/N Diet. 301	Food Science	2+2	Sem. I
7.	FN 403/N Diet. 302	Food Standards and Quality Control	2+1	Sem. I
8.	FN 404/N Diet. 303	Food Toxicology	2+0	Sem. I
9.	FN 405/N Diet. 304	Diet Therapy and Nutrition Support	2+2	Sem. I
10.	FN 406	Food Product Development	1+1	Sem. I
11.	FN 421	Internship I - Entrepreneurial Placement/ Inplant Training	0+2	Sem. II
12.	FN 422	Internship II- Project Report and Presentation	0+4(NC)	Sem. II
13.	FN 423	Internship III -Experiential Learning in Bakery and Confectionery	0+8	Sem. II

## **FAMILY RESOURCE MANAGEMENT**

(Interior and Exterior Space Designing)

1.	FRM 302/ID 211	Furniture Design and Arrangement	2+1	Sem. II
2.	FRM 303/ID 204	Floor and Floor Coverings	2+1	Sem. II
3.	FRM 304	Walls and Window Treatments	2+1	Sem. II
4.	FRM 305/ID 212	Floral Creations	1+3	Sem. II
5.	FRM 306/ID 204	Interior Design Drawings	1+3	Sem. II
6.	FRM 401	Traditional and Contemporary Interiors	3+0	Sem. I
7.	FRM 402	Computer Aided Interior Designing	0+4	Sem. I
8.	FRM 403/ID 408	Accessories for Interior Enrichment	1+2	Sem. I
9.	FRM 404	Residential Space Designing	0+2	Sem. I
10.	FRM 405/ID 304	Functional Interiors for Special Needs	1+1	Sem. I
11.	FRM 421	Internship I -Entrepreneurial Placement/ Inplant Training	0+2	Sem. II
12.	FRM 422	Internship II - Project Report and Presentation	0+4(NC)	Sem. II
13.	FRM 423	Internship III - Experiential Learning in Artistic Creations	0+8	Sem. II

## **HUMAN DEVELOPMENT**

(Organization and Management of ECCD Programme)

1.	HD 302	Infant Stimulation Programme	2+1	Sem. II
2.	HD 303	Developmental Assessment of Young Children	2+1	Sem. II
3.	HD 304	Developmental Planning for Child Care Services	2+1	Sem. II
4.	HD 305	Entrepreneurship in Child Care Services	2+1	Sem. II
5.	HD 306	Child Guidance and Family Counselling	2+1	Sem. II
6.	HD 401	Child and Family Welfare	2+1	Sem. I
7.	HD 402	Parent Education	2+1	Sem. I
8.	HD 403	Creative Experiences for Children	1+1	Sem. I
9.	HD 404	Dramatic and Rhythmic Activities for Children	1+1	Sem. I
10.	HD 405	Literature for Young Children	1+1	Sem. I
11.	HD 406	Developing Play Materials for Children	1+1	Sem. I
12.	HD 407	Intervention Programmes for Developmentally Challenged Children	1+1	Sem. I
13.	HD 421	Internship I -Entrepreneurial Placement/ Inplant Training	0+2	Sem. II
14.	HD 422	Internship II - Project Report and Presentation	0+4(NC)	Sem. II
15.	HD 423	Internship III - Experiential Learning in Child Care Providers Training	0+8	Sem. II

## HOME SCIENCE EXTENSION AND COMMUNICATION MANAGEMENT

(Information Technology and Communication Management)

1.	HECM 302	Communication Management	2+1	Sem. II
2.	HECM 303	Mass Media Communication	2+2	Sem. II
3.	HECM 304	Photography	1+2	Sem. II
4.	HECM 305	Designing Instructional Media	1+3	Sem. II
5.	HECM 401	Instructional Video Production	1+3	Sem. I
6.	HECM 402	Public Relations and Social Marketing	2+1	Sem. I
7.	HECM 403	Training and Human Resource Development	1+2	Sem. I
8.	HECM 404	Project Management	1+2	Sem. I
9.	HECM 405	Entrepreneurship Development for Rural Families	2+2	Sem. I
10.	HECM 421	Internship I-Entrepreneurial Placement/ In Plant Training	0+2	Sem. II
11.	HECM 422	Internship II-Project Report and Presentation	0+4(NC)	Sem. II
12.	HECM 423	Internship III-Experiential Learning in Multimedia Production	0+8	Sem. II
13.	HECM 431	Rural Awareness Work Experience in Home Science (RAWWE)	0+8	Sem. II

Total Credit Hours requirement of B.Sc. (Hons) Home Science 6-Year Programme = 232

**SEMESTER-WISE STUDY PROGRAMME OF B.Sc. (Hons.) HOME SCIENCE - 4 YEAR DEGREE PROGRAMME**

**FIRST YEAR**

<b>SEM I</b>		<b>SEM II</b>	
ATS 101	3(1+2)	ATS 102	3(2+1)
FN 101/N Diet. 101	3(2+1)	FN 102/N Diet. 102	3(3+0)
FRM 101	2(2+0)	FRM 103	2(1+1)
FRM 102	3(1+2)	HD 102	3(2+1)
HD 101	3(2+1)	HD 103	2(2+0)
HECM 101	2(2+0)	HECM 102	3(1+2)
Pbi 101/Pbi. Cul. 101	2(0+2/2+0)NC	HD 106	2(1+1)
Zoo. 102	3(2+1)NC	CSE 101	2(0+2)
NSS/NSO/NCC	1(0+1)NC	Math. 106	2(2+0) NC
		NSS/NSO/NCC	1(0+1)NC
<b>Total</b>	<b>10+6=16+6NC</b>	<b>Total</b>	<b>12+8=20+3NC</b>

**SECOND YEAR**

<b>SEM I</b>		<b>SEM II</b>	
ATS 201	3(2+1)	ATS 202	3(1+2)
FN 201/N Diet. 105	3(1+2)	FN 202/N Diet. 106	3(2+1)
FRM 201	2(1+1)	FRM 202	3(1+2)
HD 201	3(2+1)	HD 202	2(2+0)
HECM 201	3(3+0)	HECM 202	3(2+1)
Chem. 102	3(2+1)	Eng. 102	3(1+2)
Zoo. 205	3(3+0)	Biochem. 202	3(2+1)
Bot. 102	3(2+1) NC	Env. 301	3(3+0)
NSS/NSO/NCC	1(0+1)NC	NSS/NSO/NCC	1(0+1)NC
<b>Total</b>	<b>14+6=20+4NC</b>	<b>Total</b>	<b>14+9=23+1NC</b>

**THIRD YEAR**

<b>SEM I</b>		<b>SEM II</b>	
ATS 301	3(1+2)	Specialization/ Professional Courses	14-17
FN 301/N Diet. 201	3(2+1)	Supporting Courses	7-8
FRM 301	3(2+1)		
HD 301	2(2+0)		
HECM 301	4(2+2)		
Mgt. 424	2(2+0)		
Stat. 204	2(2+0)		
Educational Tour	1(NC)		
<b>Total</b>	<b>13+6=19+1NC</b>	<b>Total</b>	<b>21-25 (maximum of 24)</b>

**FOURTH YEAR**

<b>SEM I</b>		<b>SEM II</b>	
Specialization /Professional Courses	14-17	RAWE	0+8
Supporting Courses	4-5	Internship I	0+2
		Internship II	0+4 (NC)
		Internship III Experiential Learning	0+8
<b>Total</b>	<b>18-22</b>	<b>Total</b>	<b>0+18=18+4NC</b>



### List of Deficiency Courses to be offered

Sr.No.	Course Title	Course No.	Credit Hours
1.	Basic Punjabi*	Pbi. 101	2(0+2) NC
2.	Introductory Zoology**	Zoo. 102	3(2+1)NC
3.	Fundamentals of Botany**	Bot. 102	3(2+1) NC
4.	Punjabi Culture***	Pbi.Cul. 101	2(2+0)NC
5.	Introductory Mathematics****	Math. 106	2(2+0) NC

\* For undergraduate students who have not studied Punjabi upto Matric or 10+2 level

\*\* For students admitted after 10+2 Non-Medical stream

\*\*\* For ICAR nominees and foreign students

\*\*\*\* For students admitted after 10+2 Medical stream

#### 1. Educational Tour

Visit to Home Science College; large scale Catering or Training Institutes/Hotels (five star), Preservation Units; Textile Mills, NIFT/NITRA/IIT; Ford Foundation Centre/School of Planning and Architecture/National Building Organisation, Furniture Industry; Institute of Mass Communication/ Mass Communication Research Centre, Institute for Non-formal Education.

#### 2. Total package for B.Sc. (Hons) H.Sc. 4 year degree programme:

	Credit Hours
Basic Courses	21
Core Courses	75 ( 5 x 15)
Special Core Course	02
Specialization/Professional	31
Supporting	12
Internship	14*
RAWE	08
NSS and Physical Education	NSS/NSO/NCC for 4 Semesters,
Educational Tour	04(NC)
	01(NC)
<b>Total</b>	<b>168</b>

Supporting courses will be from areas other than Specialization and of 400 series from departments within the College and of 300 series from departments outside the College.

\*Includes Internship I (0+2), Internship II (0+4NC) and Internship III (Experiential Learning for 0+8 credit hours).

## COURSE CURRICULUM FOR B.Sc. (Hons.) HOME SCIENCE 4-YEAR PROGRAMME AFTER 10+2

### BASIC COURSES

#### 1. Basic Sciences and Humanities

##### A. Deficiency Courses (Non-Creditable)

##### a) For students from Non-Medical stream

1.	Zoo. 102	Introductory Zoology	2+1
2.	Bot. 102	Fundamentals of Botany	2+1
		Total	4+2

##### b) For students from Medical stream

1.	Math. 106	Introductory Mathematics	2+0
		Total	2+0

##### c) For students who have not studied Punjabi upto Matric or +2 level

1.	Pbi. 101	Basic Punjabi	0+2
		Total	0+2

##### d) For ICAR Nominees / Foreign students

1.	Pbi. Cul. 101	Punjabi Culture	2+0
		Total	2+0

### (B) REQUIRED COURSES

#### I Basic Sciences and Humanities

1.	Zoo. 205	Human Physiology	3+0
2.	Chem. 102	Introductory Organic Chemistry	2+1
3.	Biochem. 202	Introductory Biochemistry	2+1
4.	Eng. 102	Comprehension and Communication Skills in English	1+2
5.	Mgt. 424	Fundamentals of Marketing Management	2+0
6.	Stat. 204	Principles of Statistics	2+0
		Total:	12+4

#### II Agriculture

1.	Env. 301	Environmental Science	3+0
2.	Ent. 303	Household and Kitchen Garden Entomology ( Compulsory Supporting Course)	1+1
		Total:	4+1

#### III Agricultural Engineering

1.	CSE 101	Introduction to Computer Applications	0+2
		Total:	0+2

## V. Home Science

### A. Required Courses

ATS 101	Fundamentals of Clothing Construction	1+2	Sem. I
ATS 102	Textile Science and Care	2+1	Sem. II
ATS 201	Fundamentals of Weaving and Knitting	2+1	Sem. I
ATS 202	Apparel Designing and Construction	1+2	Sem. II
ATS 301	Introduction to Dyeing and Printing	1+2	Sem. I
FN 101/N Diet. 101	Introduction to Foods	2+1	Sem. I
FN 102/N Diet. 102	Fundamentals of Nutrition	3+0	Sem. II/I
FN 201/N Diet. 105	Home Scale Food Preservation and Storage	1+2	Sem. I
FN 202/N Diet. 106	Community Nutrition	2+1	Sem. II
FN 301/N Diet. 201	Normal and Therapeutic Nutrition	2+1	Sem. I
FRM 101	Management of Family Resources	2+0	Sem. I
FRM 102	Home Arts and Crafts	1+2	Sem. I
FRM 103	Housing and Space Management	1+1	Sem. II
FRM 201	Fundamentals of Art and Interior Enrichment	1+1	Sem. I
FRM 202	Household Equipment	1+2	Sem. II
FRM 301	Family Economics and Consumer Education	2+1	Sem. I
HD 101	Development during Early Years	2+1	Sem. I
HD 102	Early Childhood Education	2+1	Sem. II
HD 103	Late Childhood and Adolescence	2+0	Sem. II
HD 106*	Human Values in Education	1+1	Sem. I
HD 201	Children with Special Needs	2+1	Sem. I
HD 202	Dynamics of Marriage and Family	2+0	Sem. II
HD 301	Adulthood and Ageing	2+0	Sem. I
HECM 101	Home Science Extension and Rural Development	2+0	Sem. I
HECM 102	Instructional Technology	1+2	Sem. II
HECM 201	Communication and Adoption	3+0	Sem. I
HECM 202	Extension Training Management	2+1	Sem. II
HECM 301	Programme Planning and Evaluation	2+2	Sem. I

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Total

77(48 + 29 )

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## Total Credit Hour Requirements of B.Sc. (Hons.) Home Science 4-Year Programme

a) For students coming from Medical Stream without Punjabi	172
b) For students coming from Medical Stream with Punjabi	170
c) For students coming from Non-Medical Stream without Punjabi	176
d) For students coming from Non-Medical Stream with Punjabi	174
e) For ICAR Nominees / Foreign students from Medical Stream	172
f) For ICAR Nominees / Foreign students from Non-Medical Stream	176

## Areas of Specialization in various Elective Programmes and package of courses for each

### 1. Apparel and Textile Science

(Apparel Production Management)

ATS 302	Traditional Textiles of India	2+1	Sem. II
ATS 303	Fundamentals of Fashion Illustrations	1+2	Sem. II
ATS 304	Computer Aided Fashion Designing - I	0+3	Sem. II
ATS 305	Draping and Pattern Making	0+3	Sem. II
ATS 306	Structural Fabric Designing	1+2	Sem. II
ATS 401	Apparel Manufacturing	1+2	Sem. I
ATS 402	Traditional Costumes of India	2+1	Sem. I
ATS 403	Computer Aided Fashion Designing - II	0+2	Sem. I
ATS 404	Textile Decoration Techniques	0+2	Sem. I
ATS 405	Textile Designing	0+3	Sem. I
ATS 406	Fashion Merchandising	2+1	Sem. I
ATS 421	Internship-I Entrepreneurial Placement/ Inplant Training	0+2	Sem. II
ATS 422	Internship - II Project Report and Presentation	0+4 NC	Sem. II
ATS 423	Internship - III Experiential Learning in Apparel Manufacturing	0+8	Sem. II

### 2. Food & Nutrition

(Nutrition and Dietetics)

FN 302/N Diet. 202	Nutrition for Special Groups	3+0	Sem. II/I
FN 303/N Diet. 103	Food Hygiene and Sanitation	2+1	Sem. II/I
FN 304	Bakery and Confectionery	1+3	Sem. II
FN 305/N Diet. 204	Institutional Food Service Management	2+2	Sem. II
FN 401	Catering Management	0+2	Sem. I
FN 402/N Diet. 301	Food Science	2+2	Sem. I
FN 403/N Diet. 302	Food Standards and Quality Control	2+1	Sem. I
FN 404/N Diet. 303	Food Toxicology	2+0	Sem. I
FN 405/N Diet. 304	Diet Therapy and Nutrition Support	2+2	Sem. I
FN 406	Food Product Development	1+1	Sem. I

FN 421	Internship I - Entrepreneurial Placement/Inplant Training	0+2	Sem. II
FN 422	Internship II- Project Report and Presentation	0+4 NC	Sem. II
FN 423	Internship III - Experiential Learning in Bakery and Confectionary	0+8	Sem. II

### 3. Family Resource Management

(Interior and Exterior Space Designing)

FRM 302/ID 211	Furniture Design and Arrangement	2+1	Sem. II
FRM 303/ID 214	Floor and Floor Coverings	2+1	Sem. II
FRM 304	Walls and Window Treatments	2+1	Sem. II
FRM 305/ID 212	Floral Creations	1+3	Sem. II
FRM 306/ID 204	Interior Design Drawings	1+3	Sem. II
FRM 401	Traditional and Contemporary Interiors	3+0	Sem. I
FRM 402	Computer Aided Interior Designing	0+4	Sem. I
FRM 403/ID 408	Accessories for Interior Enrichment	1+2	Sem. I
FRM 404	Residential Space Designing	0+2	Sem. I
FRM 405/ID 304	Functional Interiors for Special Needs	1+1	Sem. I
FRM 421	Internship I -Entrepreneurial Placement/Inplant Training	0+2	Sem. II
FRM 422	Internship II - Project Report and Presentation	0+4 NC	Sem. II
FRM 423	Internship III - Experiential Learning in Artistic Creations	0+8	Sem. II

### 4. Human Development

(Organization and Management of ECCD Programme)

HD 302	Infant Stimulation Programme	2+1	Sem. II
HD 303	Developmental Assessment of Young Children	2+1	Sem. II
HD 304	Developmental Planning for Child Care Services	2+1	Sem. II
HD 305	Entrepreneurship in Child Care Services	2+1	Sem. II
HD 306	Child Guidance and Family Counselling	2+1	Sem. II
HD 401	Child and Family Welfare	2+1	Sem. I
HD 402	Parent Education	2+1	Sem. I
HD 403	Creative Experiences for Children	1+1	Sem. I
HD 404	Dramatic and Rhythmic Activities for Children	1+1	Sem. I
HD 405	Literature for Young Children	1+1	Sem. I
HD 406	Developing Play Materials for Children	1+1	Sem. I
HD 407	Intervention Programmes for Developmentally Challenged Children	1+1	Sem. I
HD 421	Internship I -Entrepreneurial Placement/Inplant Training	0+2	Sem. II
HD 422	Internship II - Project Report and Presentation	0+4NC	Sem. II
HD 423	Internship III - Experiential Learning in Child Care Providers Training	0+8	Sem. II

## 5. Home Science Extension and Communication Management

(Information Technology and Communication Management)

HECM 302	Communication Management	2+1	Sem. II
HECM 303	Mass Media Communication	2+2	Sem. II
HECM 304	Photography	1+2	Sem. II
HECM 305	Designing Instructional Media	1+3	Sem. II
HECM 401	Instructional Video Production	1+3	Sem. I
HECM 402	Public Relations and Social Marketing	2+1	Sem. I
HECM 403	Training and Human Resource Development	1+2	Sem. I
HECM 404	Project Management	1+2	Sem. I
HECM 405	Entrepreneurship Development for Rural Families	2+2	Sem. I
HECM 421	Internship I- Entrepreneurial Placement/ In Plant Training	0+2	Sem. II
HECM 422	Internship II- Project Report and Presentation	0+4NC	Sem. II
HECM 423	Internship III- Experiential Learning in Multimedia Production	0+8	Sem. II
HECM 431	Rural Awareness Work Experience in Home Science(RAWE)	0+8	Sem. II

Total Credit Hours requirement of B.Sc. (Hons) Home Science 6-Year Programme = 232

- a) For students coming from Medical Stream without Punjabi 172
- b) For students coming from Medical Stream with Punjabi 170
- c) For students coming from Non-Medical Stream without Punjabi 176
- d) For students coming from Non-Medical Stream with Punjabi 174
- e) For ICAR Nominees / Foreign students from Medical Stream 172
- f) For ICAR Nominees / Foreign students from Non-Medical Stream 176

**SEMESTERWISE STUDY PROGRAMME FOR B.Sc. (Hons.)  
FASHION DESIGNING-4 YEAR PROGRAMME AFTER 10+2**

**FIRST YEAR**

<b>SEM I</b>		<b>SEM II</b>	
FD 101	3(1+2)	FD 111	2(0+2)
FD 102	2(0+2)	FD 112	2(2+0)
FD 103	3(2+1)	FD 113	3(0+3)
FD 104	3(0+3)	FD 114	3(1+2)
FD 105	2(2+0)	FD 115	3(1+2)
FD 106	2(2+0)	FD 116	3(1+2)
CSE 103	2(0+2)	Eng.301	3(1+2)
NSS/NSO/NCC	0+1(NC)	HD 106	2(1+1)
		NSS/NSO/NCC	0+1(NC)
<b>Total</b>	<b>7+10=17+1 NC</b>	<b>Total</b>	<b>7+14=21+1 NC)</b>

**SECOND YEAR**

<b>SEM I</b>		<b>SEM II</b>	
FD 201	3(0+3)	FD 211	3(1+2)
FD 202	4(2+2)	FD 212	4(0+4)
FD 203	3(2+1)	FD 213	3(0+3)
FD 204	2(0+2)	FD 214	2(0+2)
FD 205	2(0+2)	FD 215	3(2+1)
FD 206	3(2+1)	FD 216	2(1+1)
FD 207	2(0+2)	HECM 211	3(2+1)
Env 301	3(3+0)	NSS/NSO/NCC	0+1(NC)
NSS/NSO/NCC	0+1(NC)		
<b>Total</b>	<b>9+13=22+1NC</b>	<b>Total</b>	<b>6+14=20+1NC)</b>

**THIRD YEAR**

<b>SEM I</b>		<b>SEM II</b>	
FD 301	3(2+1)	FD 311	2(1+1)
FD 302	4(2+2)	FD 312	2(2+0)
FD 303	3(0+3)	FD 313	2(2+0)
FD 304	2(0+2)	FD 314	2(1+1)
FD 305	3(1+2)	FD 315	6(2+4)
FD 306	3(1+2)	HECM 312	3(1+2)
FD 307	2(2+0)	Mgt 301	2(2+0)
Mgt 302	2(2+0)		
Educational Tour	1(0+1) (NC)		
<b>Total</b>	<b>10+12=22+1 NC</b>	<b>Total</b>	<b>11+8=19</b>

**FOURTH YEAR**

<b>SEM I</b>		<b>SEM II</b>	
FD 401	2(2+0)	FD 411	6(0+6)
FD 402	12(0+12)	FD 419/Internship-I	12(NC)
FD 410	2(0+2)	FD 420/Internship-II	4(0+4)
<b>Total</b>	<b>2+14=16</b>	<b>Total</b>	<b>0+10=10+12 NC)</b>

**1. Educational Tour**

Visit to Home Science College; large scale Catering or Training Institutes/Hotels (five star), Preservation Units; Textile Mills, NIFT/NITRA/IIT; Ford Foundation Centre/School of Planning and Architecture/National Building Organisation, Furniture Industry; Institute of Mass Communication/ Mass Communication Research Centre, Institute for Non-formal Education.



**COURSE CURRICULUM FOR B.Sc. (Hons.)  
FASHION DESIGNING-4 YEAR PROGRAMME AFTER 10+2**

**(A) REQUIRED COURSES**

**I Basic Sciences and Humanities**

			<b>Cr Hrs</b>
1.	Eng. 301	Communication Skills and Technical Writing	1+2
2.	Mgt. 301	Fundamentals of Entrepreneurship	2+0
3.	Mgt. 302	Accounting and Inventory Management	2+0

**II Home Science**

**a Apparel and Textile Science**

1.	FD 101	Basics of Design Composition	1+2
2.	FD 102	Visual Studies and Appreciation	0+2
3.	FD 103	Introductory Textiles	2+1
4.	FD 104	Introductory Sewing Techniques	0+3
5.	FD 105	Dynamics of Fashion	2+0
6.	FD 106	Introduction to Apparel Industry	2+0
7.	FD 111	Fashion Drawing- I	0+2
8.	FD 112	Fashion Studies	2+0
9.	FD 113	Textile Decorations	0+3
10.	FD 114	Pattern Making and Garment Construction-I	1+2
11.	FD 115	Introduction to Knitwear Technology	1+2
12.	FD 116	Woven Structures	1+2
13.	FD 201	Fashion Drawing- II	0+3
14.	FD 202	Merchandising Fashion	2+2
15.	FD 203	Traditional Textiles	2+1
16.	FD 204	Pattern Making and Garment Construction-II	0+2
17.	FD 205	Knitwear Designing	0+2
18.	FD 206	Costumes of the World	2+1
19.	FD 207	Computer Aided Fashion Illustrations	0+2
20.	FD 211	Apparel Production Technology	1+2
21.	FD 212	Computer Aided Designing and Pattern Making	0+4
22.	FD 213	Draping and Flat Pattern Making	0+3
23.	FD 214	Basics of Grading	0+2
24.	FD 215	Indian Costumes	2+1
25.	FD 216	Garment Production Machinery and Equipment	1+1
26.	FD 301	Retail Fashion Merchandising and Marketing	2+1
27.	FD 302	Quality Control	2+2
28.	FD 303	Commercial Product Designing	0+3
29.	FD 304	Graphic Design	0+2

30.	FD 305	Dyeing Studies	1+2
31.	FD 306	Textile Printing	1+2
32.	FD 307	Trims and Accessories	2+0
33.	FD 311	Fashion Communication	1+1
34.	FD 312	Sociological, Psychological and Ethical Aspects of Fashion	2+0
35.	FD 313	Apparel Supply Chain Management	2+0
36.	FD 314	Visual Merchandising	1+1
37.	FD 315	Craft Documentation	2+4
38.	FD 401	Green Technologies in Apparel Manufacturing	2+0
39.	FD 402	Experiential Learning in Fashion and Life Style Products	0+12
40.	FD 410	Seminar	0+2
41.	FD 411	Product Line Development / Presentation	0+6
42.	FD 419	Internship-I	0+12 (NC)
43.	FD 420	Internship-II	0+4

**b Home Science Extension & Communication Management**

1.	HECM 211	Interpersonal and Organisational Skills	2+1
2.	HECM 312	Fashion Photography	1+2

**c Human Development**

1.	HD 106	Human Values in Education	1+1
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**III College of Agriculture**

1.	Env. 301	Introduction to Environmental Sciences	3+0
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**IV College of Agricultural Engineering & Technology**

1.	CSE 103	Introduction to Computer Use	0+2
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Total Credit Hours requirement for B.Sc. (Hons.) Fashion Designing 4 year Programme = 164

**SEMESTER-WISE STUDY PROGRAMME FOR B.Sc. (Hons.) NUTRITION AND  
DIETETICS - 4 YEAR PROGRAMME**

**FIRST YEAR**

<b>SEM I</b>		<b>SEM II</b>	
N Diet. 101/FN 101	3(2+1)	N Diet. 105/FN 201	3(1+2)
N Diet. 102/FN 102	3(3+0)	N Diet. 106/FN 202	3(2+1)
N Diet. 103/FN303	3(2+1)	CSE 101	2(0+2)
N Diet. 104	2(0+2)	Eng. 102	3(1+2)
PBG 102	2(2+0)	Biochem. 202	3(2+1)
Math. 106*	2(2+0) (NC)	Stat. 204	2(2+0)
Soc. 201	2(2+0)	Micro. 301	3(2+1)
Zoo. 205	3(3+0)	HD 106	2(1+1)
NSS/NSO/NCC	1(0+1)(NC)	NSS/NSO/NCC	1(0+1)(NC)
<b>Total</b>	<b>14+4=18+3 NC</b>	<b>Total</b>	<b>11+10=21+1NC</b>

**SECOND YEAR**

<b>SEM I</b>		<b>SEM II</b>	
N Diet. 201/FN 301	3(2+1)	N Diet. 204/FN 305	4(2+2)
N Diet. 202/FN 302	3(3+0)	N Diet. 205	3(2+1)
N Diet. 203	4(3+1)	N Diet. 206	2(0+2)
FT 306	2(1+1)	N Diet. 207	2(2+0)
Zoo. 311	3(3+0)	N Diet. 208	3(2+1)
Biochem. 422	3(2+1)	HECM 102	3(1+2)
Mgt. 424	2(2+0)	Env. 301	3(3+0)
NSS/NSO/NCC	1(0+1)(NC)	NSS/NSO/NCC	1(0+1)(NC)
<b>Total</b>	<b>16+4=20+1 NC</b>	<b>Total</b>	<b>12+8=20+1 NC</b>

**THIRD YEAR**

<b>SEM I</b>		<b>SEM II</b>	
N Diet. 301/FN 402	4(2+2)	N Diet. 306	4(3+1)
N Diet. 302/FN 403	3(2+1)	N Diet. 307	3(2+1)
N Diet. 303/FN 404	2(2+0)	N Diet. 308	3(3+0)
N Diet. 304/FN 405	4(2+2)	FT 302	2(1+1)
N Diet. 305	4(0+4)	Micro. 306	4(3+1)
Educational Tour	1(0+1) (NC)	Biochem. 424	3(0+3)
<b>Total</b>	<b>8+9=17+1 NC</b>	<b>Total</b>	<b>12+7=19</b>

**FOURTH YEAR**

<b>SEM I</b>		<b>SEM II</b>	
N Diet. 401	2(0+2)	N Diet. 406/Internship-I	16(0+16) (NC)
N Diet. 402	3(3+0)	N Diet. 407/Internship-II	6(0+6)
N Diet. 403	4(1+3)		
N Diet. 404	4(2+2)		
N Diet. 405	0+1		
Seminar			
HECM 302	3(2+1)		
Biochem. 427	2(2+0)		
<b>Total</b>	<b>10+9=19</b>	<b>Total</b>	<b>0+6=6+16 NC</b>

**Educational Tour**

Visit to large scale catering institutes/training institutes/hotels (five star)/food craft institutes/Home Science Colleges and Dietary department of various hospitals.

**COURSE CURRICULUM FOR B.Sc. (Hons.)  
NUTRITION AND DIETETICS - 4 YEAR PROGRAMME**

**1. Basic Sciences and Humanities**

**(a) Deficiency Course (Non Creditable)**

**Cr Hrs**

**For students from medical stream**

1.	Math. 106	Introductory Mathematics	2+0(NC)
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**(b) Required courses**

1.	Soc. 201	Rural Sociology and Human Psychology	2+0
2.	Zoo. 205	Human Physiology	3+0
3.	Biochem. 202	Introductory Biochemistry	2+1
4.	Micro. 301	Introductory Microbiology	2+1
5.	Stat. 204	Principles of Statistics	2+0
6.	Mgt. 424	Fundamentals of Marketing Management	2+0
7.	Zoo. 311	Fundamentals of Applied Human Physiology	3+0
8.	Biochem. 422	Biochemistry for Home Science	2+1
9.	Eng. 102	Comprehensive and Communication Skills in English	1+2
10.	Biochem. 424	Experiments in Biochemistry	0+3
11.	Biochem. 427	Fundamentals of nutritional Biochemistry	2+0
12.	Micro. 306	Fundamentals of Food and Dairy Microbiology	3+1

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24+9

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**2. Agriculture**

1.	PBG 102	Introductory Genetics	2+0
2.	FT 302	Introduction to Food Science and Post Harvest Value Addition	1+1
3.	FT 306	Specialty Foods	1+1
4.	Env. 301	Environmental Science	3+0

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7+2

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**3. Agricultural Engineering**

1.	CSE 101	Introduction to Computer Applications	0+2
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0+2

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**4. Home Science**

**I Food and Nutrition**

1.	N Diet. 101/FN 101	Introduction to Foods	2+1
2.	N Diet. 102/FN 102	Fundamentals of Nutrition	3+0
3.	N Diet. 103/FN 303	Food Hygiene and Sanitation	2+1
4.	N Diet. 104	Applied Bakery	0+2
5.	N Diet. 105/FN 201	Home Scale Food Preservation and Storage	1+2
6.	N Diet. 106/FN 202	Community Nutrition	2+1
7.	N Diet. 201/FN 301	Normal and Therapeutic Nutrition	2+1
8.	N Diet. 202/FN 302	Nutrition for Special Groups	3+0
9.	N Diet. 203	Human Nutrition	3+1

10.	N Diet. 204/FN 305	Institutional Food Service Management	2+2
11.	N Diet. 205	Clinical Nutrition	2+1
12.	N Diet. 206	Dietetic Food Development	0+2
13.	N Diet. 207	Drug Nutrient Interaction	2+0
14.	N Diet. 208	Geriatric Nutrition	2+1
15.	N Diet. 301/FN 402	Food Science	2+2
16.	N Diet. 302/FN 403	Food Standards and Quality Control	2+1
17.	N Diet. 303/FN 404	Food Toxicology	2+0
18.	N Diet. 304/FN 405	Diet Therapy and Nutrition Support	2+2
19.	N Diet. 305	Diet Counselling	0+4
20.	N Diet. 306	Applied Community Nutrition	3+1
21.	N Diet. 307	Maternal and Infant Nutrition	2+1
22.	N Diet. 308	Sports Nutrition	3+0
23.	N Diet. 401	Traditional Indian Food Products	0+2
24.	N Diet. 402	Nutrition and Immunity	3+0
25.	N Diet. 403	Computer Applications in Human Nutrition	1+3
26.	N Diet. 404	Nutritional Strategies in ICU	2+2
27.	N Diet. 405	Seminar	0+1
28.	N Diet. 406	Internship I - Inplant Training	0+16 NC
29.	N Diet. 407	Internship II - Case Studies - Report Writing and Presentation	0+6
			48+40 (16 NC)

### II Home Science Extension & Communication Management

1.	HECM 102	Instructional Technology	1+2
2.	HECM 302	Communication Management	2+1
			3+3

### III Human Development

3.	HD 106	Human Values in Education	1+1
			1+1

Total Credit Hours requirement of B.Sc. (Hons) Nutrition and Dietetics 4-Year Programme

- a) For students coming from Medical Stream 161+2\*
- b) For students coming from Non-Medical Stream 161

\* Deficiency course for students from Medical Students

**SEMESTER-WISE STUDY PROGRAMME OF B.Sc. (Hons.) INTERIOR DESIGN  
4 YEAR PROGRAMME**

**FIRST YEAR**

<b>SEM I</b>		<b>SEM II</b>	
ID 101	2+0	ID 111	2+1
ID 102	2+1	ID 112	2+1
ID 103	1+2	ID 113	2+0
ID 104	3+0	ID 114	0+2
ID 105	2+1	ID 115	2+1
FD 103	2+1	ID 116	3+0
CSE 101	0+2	Eng. 102	1+2
NSS/NSO	0+1 NC	HD 106	1+1
		NSS/NSO	0+1 NC
<b>Total</b>	<b>12+7=19+1NC</b>	<b>Total</b>	<b>13+7=21+1NC</b>

**SECOND YEAR**

<b>SEM III</b>		<b>SEM IV</b>	
ID 201	3+0	ID 211/ FRM 302	2+1
ID 202	2+1	ID 212/ FRM 305	1+3
ID 203	2+1	ID 213	1+2
ID 204 / FRM 306	1+3	ID 214 / FRM 303	2+1
ID 205	0+2	ID 215	2+1
ID 206	2+1	HECM 211	2+1
ID 207	0+2	HECM 304	1+2
NSS/NSO	0+1 NC	NSS/NSO	0+1 NC
<b>Total</b>	<b>10+10=20+1NC</b>	<b>Total</b>	<b>11+11=22+1NC</b>

**THIRD YEAR**

<b>SEM V</b>		<b>SEM VI</b>	
ID 301	1+2	ID 311	2+0
ID 302	1+2	ID 312	2+1
ID 303	1+1	ID 313	0+3
ID 304/ FRM 405	1+1	ID 314	0+3
ID 305	0+2	ID 315	1+1
Mgt. 302	2+0	ID 316	2+0
Eng. 301	1+2	Flori. 301	1+1
Env. 301	3+0	Mgt. 421	2+0
Educational Tour	0+1		
<b>Total</b>	<b>10+10=20+1NC</b>	<b>Total</b>	<b>10+9=19</b>

**FOURTH YEAR**

<b>SEM VII</b>		<b>SEM VIII</b>	
ID 401	0+1	ID 411	0+8
ID 402	0+3	ID 412	0+8
ID 403	1+1	ID 413	0+4
ID 404	2+0		
ID 405	0+2		
ID 407	2+1		
ID 408 / FRM 403	1+2		
<b>Total</b>	<b>6+10=16</b>	<b>Total</b>	<b>0+20=20</b>

**Educational Tour**

Visit to Home Science College; Hotels (three / four / five star), Resorts; Textile Mills; Ford Foundation Centre/School of Planning and Architecture/National Building Organisation, Furniture Industry; Handloom Industry.



**COURSE CURRICULUM FOR B.Sc. (Hons.)  
INTERIOR DESIGN - 4 YEAR PROGRAMME**

**(A) REQUIRED COURSES**

**I Basic Sciences and Humanities**

		<b>Cr Hrs</b>
1.	Eng. 102 Comprehension and Communication Skills in English.	1+2
2.	Eng. 301 Communication Skills and Technical Writing	1+2
3.	Mgt. 301 Fundamentals of Entrepreneurship	2+0
4.	Mgt. 421 Introduction to Management and Marketing	2+0
		6+4

**II Home Science**

**a Apparel and Textile Science**

1.	FD 103 Introductory Textiles	2+1
		2+1

**b Family Resource Management**

1.	ID 101	History of Interior Design	2+0
2.	ID 102	Elements of Design	2+1
3.	ID 103	Basics of Drawings and Graphics	1+2
4.	ID 104	Soft Furnishings for Interiors	3+0
5.	ID 105	Elements of Building Services	2+1
6.	ID 111	Building Materials and Construction Practices	2+1
7.	ID 112	Walls and Ceilings	2+1
8.	ID 113	Interior Landscaping	2+0
9.	ID 114	Arts and Crafts	0+2
10.	ID 115	Colour and its Application in Interiors	2+1
11.	ID 116	Introduction to Interior Spaces	3+0
12.	ID 201	Building Bye Laws and Protection	3+0
13.	ID 202	Windows and Window Treatments	2+1
14.	ID 203	Building Technology	2+1
15.	ID 204/ FRM 306	Interior Design Drawings	1+3
16.	ID 205	Computer Applications in Interior Designing - I	0+2
17.	ID 206	Residential Interior Space Design	2+1
18.	ID 207	Rendering and Presentation Techniques	0+2
19.	ID 211/ FRM 302	Furniture Design and Arrangement	2+1
20.	ID 212/ FRM 305	Floral Creations	1+3
21.	ID 213	Interior Design Detailing	1+2
22.	ID 214/ FRM 303	Floor and Floor Coverings	2+1
23.	ID 215	Lighting in Interiors	2+1
24.	ID 301	Kitchen and Bathroom Designing	1+2

25.	ID 302	Sculpture and Modelling	1+2
26.	ID 303	Furniture Design Detailing	1+1
27.	ID 304/ FRM 405	Functional Interiors for Special Needs	1+1
28.	ID 305	Computer Applications in Interior Designing - II	0+2
29.	ID 311	Vaastu in Interiors	2+0
30.	ID 312	Advanced Building Services	2+1
31.	ID 313	Computer Applications in Perspective Drawings and Rendering	0+3
32.	ID 314	Wall Units and Cabinets	0+3
33.	ID 315	Fittings and Fixtures for Interiors	1+1
34.	ID 316	Special Spaces and Public Interiors	2+0
35.	ID 401	Seminar	0+1
36.	ID 402	Interior Design Studio	0+3
37.	ID 403	Non-residential Interior Space Design	1+1
38.	ID 404	Professional Applications in Interior Design	2+0
39.	ID 405	Advances in Materials for Interior Design	0+2
40.	ID 406	Landscape Design	2+1
41.	ID 407/ FRM 403	Accessories for Interior Enrichment	1+2
42.	ID 421	Internship - I: Inplant Training	0+8 (NC)
43.	ID 422	Internship -II: Inplant Training	0+8
44.	ID 423	Internship - III: Project Report and Presentation	0+4

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56+73

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### **c Home Science Extension & Communication Management**

1.	HECM 211	Interpersonal and Organisational Skills	2+1
2.	HECM 304	Photography	1+2

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3+3

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### **d Human Development**

1.	HD 106	Human Values in Education	1+1
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1+1

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### **III College of Agriculture**

1.	Env. 301	Introduction to Environmental Sciences	3+0
2.	Flori. 301	Flower Cultivation and Landscape Gardening	1+1

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4+1

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### **IV College of Agricultural Engineering & Technology**

1.	CSE 103	Introduction to Computer Use	0+2
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0+2

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Total Credit Hours requirement for B.Sc. (Hons.) Interior Design 4 year Programme = 162