

**NEW AND RESTRUCTURED
POST-GRADUATE CURRICULA & SYLLABI**

Home Science

Foods & Nutrition
Family Resource Management
Human Development & Family Studies
Textile & Apparel Designing
Home Science Extension & Community Management



भाकृअनुप
ICAR

**Education Division
Indian Council of Agricultural Research
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EXECUTIVE SUMMARY

1. Foods and Nutrition

- 1) The courses in Foods and Nutrition aim at capacity building of students to manage long and short-term intervention within reach of family and community to achieve food and nutrition security.
- 2) The courses designed will enable students to understand global nutritional problems, current trends in nutrition and food challenges in next millenium and inculcate skill in planning, managing and executing nutrition projects for affected community.
- 3) The new PG courses planned includes food analysis, processing, nutrition for physical fitness, immunity and special conditions, food toxicology, advanced nutrients, nutrition and agriculture interface to achieve the livelihood security and longitivity.
- 4) The course programme will enable students to understand the nutritional management in natural calamities.
- 5) The courses will enable the students to manage diet during various communicable and non-communicable diseases for faster recovery.
- 6) The courses designed will develop competency to plan and prepare designer foods as per the requirement of group/community and to take it as entrepreneur.

2. Family Resource Management

- 1) Various courses designed for M.Sc. programme will enable the students to acquire the knowledge in the field of Management, Ergonomics, Energy Conservation, Environment, Product Design, Marketing, Space Designing and Communication.
- 2) The course curriculum also explores the issues related to social, economical, legal and environmental aspects with modern strategic development.
- 3) In view of the exorbitant potential of consumer sciences, the specialization in Family Resource Management has emerged as a distinct discipline.
- 4) The PG programme has been structured in such a way that it will provide innovative concepts as well as practical application of the exciting field of Family Resource Management.
- 5) The courses have been designed to equip the students for academic excellence, enhancement of life and for better job opportunities in modern perspective.
- 6) After completing the PG course programme the students will develop expertise in designing user-friendly products and workstation for comfort and safety.
- 7) The practicals planned in each course will enrich students to learn and develop better understanding of the subjects and enable them to apply scientific knowledge and methods while working in home, institution and industry.
- 8) Along with the scientific knowledge, the courses will also help the students in developing entrepreneurial qualities and finally establishing their own enterprise.

3. Human Development and Family Studies

- 1) The entire new curriculum for post graduation and Ph.D. in HDFFS has been restructured in the light of vocationalization of Graduate programme as per the directives of ICAR.

- 2) The new curriculum has been technically widened with introduction of new and skill-oriented courses to provide qualitative input to the students coming from Vocational Graduate programme.
- 3) This curriculum has an added advantage as it has given due consideration to the needs and requirements of stakeholders thus rendering it suitable for students to seek optimum placement.
- 4) Redesigning of the curriculum has been done in the light of changing scenario that the individuals and families are facing and aims at improving the quality of life of everyone.
- 5) This will develop an expertise in the students to understand and facilitate the developmental challenges at various stages of Human Development.
- 6) The students shall be equipped with knowledge and skills required for dealing with developmentally challenged children.
- 7) This will build entrepreneurship skills in students so as to run and manage various types of children's institutions which are the need of the day i.e. creches, day care centres, nursery schools, recreational centres and institutions for developmentally challenged children.
- 8) It will strengthen the capabilities of the students to develop, monitor and evaluate various innovative projects/intervention programmes for children, adults and senior citizens thus making them eligible to work with various national and international organizations or to venture into one's own enterprise.
- 9) It will capacitate students to manage counseling centres for children, adolescents, parents and families as a unit.
- 10) It will empower students with recent advances and researchable issues in Human Development and family studies.

4. Textile and Apparel Designing

- 1) Apparel and Textile has long been a source of innovation in design, development and production of Apparel profoundly influencing the fashion sector.
- 2) The course will provide the students excellent opportunity to observe, think, synthesize, evaluate and apply the acquired knowledge in textile and apparel designing.
- 3) The PG programme in Apparel and Textiles is aimed at providing the students with background knowledge about fundamental concepts of scientific, technological and management principles, develops ability to challenge the technological and managerial problems related to consumers, weavers, apparel and textile industry.
- 4) The course curriculum explores the economic, social, legal, environmental safety and ethical issues related to textile and apparel designing. The courses have been structured to lay emphasis on designing and providing up to date information on changing life styles, market and trends.
- 5) Extensive laboratory exercises will help students to acquire in-depth understanding and application of the most current and advanced tools for design analysis, manufacturing and management of textile and apparel designing.
- 6) Laboratory sessions will also allow students to plan, implement and report on the results of laboratory and simulation experiments; develop ability for quality control through assessment of apparel and textile products.
- 7) The courses have been designed to synthesize the product development through production, cost effectiveness, aesthetic and functional requirements, producibility and market needs, encourage critical thinking, use for the scientific method.

Integration of technology, development of skills and application of knowledge and skills related to practical questions and problems. These courses will help the students to promote careers and entrepreneurship in the areas of Apparel and Textiles.

5. Home Science Extension and Communication Management

- 1) Home Science Extension and Communication Management aims to develop competencies among students for reaching out to vulnerable group in community and facilitating them to secure rewarding careers and vocations in extension media and communication for rural development.
- 2) The PG programme has been designed to develop capabilities among students to analyze women specific problems, take up strategic and applied research for addressing gender issues and plan appropriate programmes for their empowerment.
- 3) The course will develop managerial skills among students for establishing horizontal and vertical linkages with stakeholders including public and private sectors. The curriculum will foster skills in developing media products and handling media campaigns and business as professional managers or freelancers.
- 4) The revised course curriculum covers wide range of topics including Global Extension Systems, Training and Human Resource Development (HRD), Communication for Development, Media Production and Management, Gender Sensitization, Corporate Communication and Event Management, ICT and New Media etc.
- 5) The course on gender issues particularly focuses on gender specific roles, responsibilities, access to and control over productive resources, constraints and opportunities so that students can plan appropriate programs for livelihood security and socio-economic empowerment of women.
- 6) The courses on corporate communication and event management are of immense importance for extension professional aiming for effective communication and planning, and organizing different events.

BSMA Committee in Home Science

(HS/FN/HDFS/CD/HM/FRM/CT/HSEE)

(Constituted by ICAR vide Office order No. F. No. 13 (1)/2007- EQR dated January 14, 2008)

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Dr Visala Patnam Head & Dean (Food Tech.)	College of Home Science, Marathwada Agrl. Univ., Parbhani	HDFS
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PREAMBLE

With the rapid change in the International and National scenario, the curriculum has been updated from time to time; however, the urgent need to update the PG curriculum seems inevitable. With tremendous increase in the information technology, the world has shrunk to a global village. The multi-nationals have invaded the homes thus, new carriers are emerging and greater competition between different job venues is coming up. Home Science as a field is firmly embedded in the agriculture and is extremely useful in enhancing the status of women and children. Thus, the PG curricula need to be re-looked and revamped to withstand the competition from other upcoming avenues of jobs as well as changing needs of farm and working families. Another rationale of this exercise is to bring about uniformity in the curricula across the SAU's.

The task of restructuring PG curricula in Home Science at the national level was started under the aegis of ICAR as early as in 1998 with the view to deliberate upon the changing needs and Objectives of the discipline and to plan strategies for further refinement. A Broad Subject Matter Area Committee (BSMAC) on Home Science consisting of seven members was framed. Its first meeting was held in January 2000 at Hyderabad along with local participants who framed the courses that were practical oriented and focused on the demand of the jobs in the changing scenario. The committee later held a workshop in April 2000 at Ludhiana, inviting academicians from Home Science colleges in SAUs and different stakeholders including entrepreneurs, industrialists and management experts. Five sub-committees of each field of H.Sc. were framed.

In view of further strengthening the existing curriculum, National Core Group Committee was set up in July 2007 at ICAR, under the Chairmanship of Dr. J.C. Katyal, Vice Chancellor, CCSHAU, Hisar, Haryana, comprising of eleven other members from different faculties with the Objective of defining names and curricula of Masters and Ph.D. disciplines and revision of syllabi for PG courses.

On the recommendation of the National Core Group, 18 Broad Subject Matter Area Committees (BSMACs) were constituted for restructuring the PG course curricula and syllabi. Dr. Maya Choudhry, Prof. and Dean College of Home Science, Udaipur was nominated as the Convener of the BSMA committee for the faculty of Home Science with nine other members including Dr. Shubhangana, Prof. & Head, Department of Human Development, Palampur; Dr. Shaileja D. Naik, Prof. & Head, Department of Clothing & Textiles, Dharwad; Dr. A. Sharda Devi, Prof. & Head, Department of Clothing & Textiles,

Hyderabad; Dr. P.B. Khadi, Head, Department of Human Development, Dharwad; Dr. (Mrs.) Tej Verma, Principal Scientist, Extension Division, ICAR, New Delhi; Dr. Avinash Sharma, Prof. & Head, Department of Family Resource Management, Palampur; Dr. Vishala Patnam, Head & Dean, Parbhani and Dr. Neelam Khetarpaul, Dean, Hisar as Member Secretary.

The exercise of restructuring PG curricula was initiated by obtaining the PG syllabi from Home Science Colleges (SAUs) situated in North-South, East-West so that the new syllabi could be framed considering the need of different areas of the country. The syllabi were received from College of Home Science of SAUs of Pantnagar, Hyderabad, Hisar, Palampur, Parbhani, Dharwad and Udaipur.

The BSMA committee meeting was held at College of Home Science, Udaipur on March 11 and 12, 2008. The members along with local participants from College of Home Science Udaipur were divided into five sub-committees based on their field of specialization. The syllabi were framed in light of current UG programme recommended by 4th Dean's committee in which professional packages have been framed for two years. The core and optional courses were framed for different areas of the discipline. A number of optional courses were designed to give a wider choice to the students. Presentations of the framed curricula and syllabus were done on 12th March, 2008 and suggestions made by the committee members and the existing PG programme of the various SAU's were incorporated. In addition, ICAR publication on curricula and syllabi for Master's degree programme in Home Science was also referred. This draft was sent to Deans of all the Home Science colleges of SAUs for their comments/suggestions.

Further, a workshop was held on 20th and 21st June 2008 at Hyderabad, and it attended by the Members of BSMAC along with invited Deans of College of Home Science of selected SAUs, academicians, faculty members of Home Science college ANGRAU, Hyderabad and stake holders. The first day of the workshop was devoted to review the comments, suggestions and deliberations made by the stakeholders. It was followed by a meeting of BSMA committee members on 21st June, 2008 in which all the deliberations were critically reviewed and necessary modifications were made keeping in mind the demands of today's changing scenario. The finalized curricula and syllabi of PG programmes were shared in the meeting of core group members, conveners and member secretary of different BSMA and invited members held on 24th June 2008 at Delhi.

The courses in new curricula have been restructured to inculcate managerial skills among students in view of meeting the contemporary needs and challenges of society at

national and international front. A holistic personality development of forthcoming students has been taken care of while developing new courses, highlighting to expertise learning in using the advanced technologies in the areas of health and nutrition, Textile and Apparel, resource management, livelihood security and communication skills. The courses planned will open the enviable avenues for the students in industries, organizations, institutions or self-employment.

The BSMA committee wishes to extend their gratitude and indebtedness to Dr. J.C. Katyal, Chairman, National Core Group and Vice-Chancellor, CCS HAU, Hisar; Dr. S.P. Tiwari, DDG (Education) and Dr. R.K. Mittal, ADG (EQR) ICAR, New Delhi for rendering all the administrative assistance.

The help provided by Dr. Vijaya Nambiar, Associate Dean & Dr. A. Sharda Devi, Prof. & Head CT, C.H.Sc., Hyderabad and her team is gratefully acknowledged for facilitating to hold the workshop and BSMA meeting at Hyderabad.

The committee is also grateful to all the Deans and Heads of Departments of the constituent Home Science College of the SAUs for extending their co-operation and sending their suggestions and comments. We would like to put on record our appreciation and thanks to the senior faculty members of College of Home Science, Udaipur and Hyderabad for their untiring efforts towards successful conduct of the total task of restructuring curricula and syllabi. Special thanks are due to Dr. S.L. Mehta, Vice-Chancellor, MPUAT, Udaipur and Dr. P.R. Reddy, Vice-Chancellor, ANGRAU, Hyderabad for extending their valuable advice and facilities. I appreciate the help and co-operation rendered by Dr. Neelam Khetrapaul, member secretary BSMAC Home Science and Dean, College of Home Science, CCS HAU, Hisar and other members of the BSMA Committee. I am thankful to Dr. Shahi Jain, Assoc. Professor, Dr. Asha Singhal, Assoc. Professor and Dr. Priti Mathur in assisting me in preparing this document. I appreciate the efforts of Mr. Ashok Dindor to bring this document in this shape.

ORGANIZATION OF COURSE CONTENTS & CREDIT REQUIREMENTS

Code Numbers

- All courses are divided into two series: 500-series courses pertain to Master's level, and 600-series to Doctoral level. A Ph. D. student must take a minimum of two 600 series courses, but may also take 500-series courses if not studied during Master's programme.
- Credit seminar for Master's level is designated by code no. 591, and the two seminars for Doctoral level are coded as 691 and 692, respectively.
- Similarly, 599 and 699 codes have been given for Master's research and Doctoral research, respectively.

Course Contents

The contents of each course have been organized into:

- Objective – to elucidate the basic purpose.
- Theory units – to facilitate uniform coverage of syllabus for paper setting.
- Suggested Readings – to recommend some standard books as reference material. This does not unequivocally exclude other such reference material that may be recommended according to the advancements and local requirements.
- A list of journals pertaining to the discipline is provided at the end which may be useful as study material for 600-series courses as well as research topics.
- E-Resources - for quick update on specific topics/events pertaining to the subject.
- Broad research topics provided at the end would facilitate the advisors for appropriate research directions to the PG students.

Minimum Credit Requirements

Subject	Master's programme	Doctoral programme
Major	20	15
Minor	09	08
Supporting	05	05
Seminar	01	02
Research	20	45
Total Credits	55	75
Compulsory Non Credit Courses	See relevant section	

Major subject: The subject (department) in which the students takes admission

Minor subject: The subject closely related to students major subject (e.g., if the major subject is Entomology, the appropriate minor subjects should be Plant Pathology & Nematology).

Supporting subject: The subject not related to the major subject. It could be any subject considered relevant for student's research work.

Non-Credit Compulsory Courses: Please see the relevant section for details. Six courses (PGS 501-PGS 506) are of general nature and are compulsory for Master's programme. Ph. D. students may be exempted from these courses if already studied during Master's degree.

FOODS AND NUTRITION
Course Structure - at a Glance

CODE	COURSE TITLE	CREDITS
FN 501*	ADVANCED FOOD SCIENCE	2+1
FN 502*	ADVANCED NUTRITION	3+0
FN 503*	FOOD ANALYSIS	1+3
FN 504*	ADVANCES IN COMMUNITY NUTRITION	1+2
FN 505	FOOD PROCESSING TECHNOLOGY	3+0
FN 506	CLINICAL NUTRITION	2+2
FN 507	NUTRITION DURING LIFE CYCLE	3+0
FN 508	NUTRITION AND PHYSICAL FITNESS	2+1
FN 509	ADVANCED DIET THERAPY	2+1
FN 510	FOOD TOXICOLOGY	2+1
FN 511	ADVANCED HUMAN PHYSIOLOGY	2+1
FN 512	FOOD SERVICE MANAGEMENT	1+2
FN 513	FOOD PRODUCT DEVELOPMENT	1+1
FN 514	NUTRITION & IMMUNITY	2+0
FN 591	MASTER'S SEMINAR	1+0
FN 599	MASTER'S RESEARCH	20
FN 601**	ADVANCES IN CARBOHYDRATES, PROTEINS AND LIPIDS	3+1
FN 602**	ADVANCES IN VITAMINS AND HORMONES	2+0
FN 603**	MINERALS IN HUMAN NUTRITION	2+1
FN 604	ADVANCES IN FOOD SCIENCES AND TECHNOLOGY	2+1
FN 605	ADVANCES IN ENERGY METABOLISM	2+0
FN 606	NUTRITION AND AGRICULTURAL INTERFACE	3+0
FN 607	NUTRITION IN EMERGENCIES	2+0
FN 608	APPLICATION OF BIOTECHNOLOGY IN FOOD SCIENCE AND NUTRITION	2+0
FN 609	GLOBAL NUTRITIONAL PROBLEMS	2+0
FN 610	MATERNAL AND CHILD NUTRITION	2+1
FN 691	DOCTORAL SEMINAR I	1+0
FN 692	DOCTORAL SEMINAR II	1+0
FN 699	DOCTORAL RESEARCH	45

* Compulsory for Master's Programme; ** Compulsory for Doctoral programme

FN 501

ADVANCED FOOD SCIENCE

2+1

Objective

To make the students aware about common food processing techniques and understand the physico-chemical properties of foods.

Theory

UNIT I

Colloidal chemistry as related to foods; evaluation of food by subjective and Objective methods. Carbohydrates in foods sources and characteristics of sugar, starch, cellulose, pectin and gums characteristics in foods; effect of cooking and processing techniques.

UNIT II

Protein in foods: Plant and animal foods; chemical and physical properties related to foods; effect of cooking and processing techniques. Properties, uses, processing techniques, changes during heating and other processing and storage of fats and oils.

UNIT III

Classification, importance, composition of fruits and vegetables and effect of cooking and other processing on their nutritive value.

UNIT IV

Classification and importance of beverages; food pigments; browning reaction. Definition, classification, uses and legal aspects of food additives; classification, nature and uses of leavening units.

Practical

Microscopic structure of different starch granules; evaluation of food by subjective and objective methods ; changes in colour , texture and flavour of foods due to processing; effect of cooking on protein , fat and carbohydrates ; product preparation using leavening agents; project work related to text .

Suggested Readings

- Borgstrom G.1968. *Principles of Food Science*. Vols. I, II. Macmillan.
- Desrosier NW & Desrosier JN. 1997. *The Technology of Food Preservation*. AVI Publ.
- Griswold RM. 1962. *The Experimental Study of Foods*. Houghton Mifflin.
- Khader V. 1999 *Text Book on Food Storage and Preservation*. Kalyani.
- Krishna Swami K. 2000 *Nutrition Research – Current Scenario*. Oxford & IBH.
- Lowe B. 1955 *Experimental Cookery*. John Wiley & Sons.
- Manay NS & Shadaksharaswamy M. 1997. *Foods, Facts and Principles*. New Age International.
- McWilliams M. 1993. *Foods, Experimental Perspectives*. Macmillan.
- Meyer LH. 1976 *Food Chemistry*. AVI Publ.
- Potter NN & Hotchkiss HJ. 1996. *Food Science*. CBS.
- Subbulakshmi G & Udipi SA. 2006. *Food Processing and Preservation*. New Age International.

FN 502

ADVANCED NUTRITION

3+0

Objective

To enable the students to understand the current trends in nutrition, functions, deficiencies and toxicity of different nutrients and acquaint about nutritional requirement in special conditions.

Theory

UNIT I

Functions, sources, requirements, digestion and absorption of carbohydrates; definition, composition, classification, functions and role of dietary fibre in various physiological disorders.

UNIT II

Basis of requirement, functions, sources, digestion and absorption of protein; Methods of assessing protein quality .Basis of requirement, functions, sources, digestion, absorption and deficiency disorders of lipids; essential fatty acids and eicosanoids.

UNIT III

Requirements, functions, sources, deficiencies and toxicities of fat and water soluble vitamins.

UNIT IV

Requirement, functions, sources, deficiency, toxicity and factors affecting absorption and utilization of macro and micro minerals .Water balance; acid and base balance.

Suggested Readings

- Anderson L, Dibble, Turkki PR, Mitchell HS & Rynbergen HJ. 1982. *Nutrition in Health and Disease*. JB Lippincott.
- Bamji MS, Rao NP & Reddy V. 1999. *Text Book of Human Nutrition*. Oxford & IBH.
- FAO/WHO/UNU 1985. *Energy and Protein Requirement*. Tech. Report 7824, WHO.
- Guthrie HA. 1989. *Introductory Nutrition*. Times Mirror/Mosby College Publ.
- ICMR. 1990. *Nutrient Requirement and Recommended Dietary Allowance for Indians*. A Report of Expert Group of the ICMR, NIN, Hyderabad.
- James WPT & Schofield EC. 1990. *Human Energy Requirements - A Manual for Planners and Nutritionists*. Oxford University Press.
- Jelliffe DB. 1966. *The Assessment of the Nutrition Status of the Community*. WHO.
- Jolliffe N. 1962. *Clinical Nutrition*. Hoeber Medical Division.
- Khader V, Sumathi S & Manorama R. 1998. Course Manual of the Short Course on "*Recent Advances in Vitaminology*", Center for Advanced Studies, Department of Foods and Nutrition, Post Graduate and Research Centre ANGRAU, Hyderabad.
- Packer L & Funchs J. 1997. *Vitamin C in Health and Disease*, Marcel Dekker.
- Passmore R & Eastwood MA. 1986. *Human Nutrition and Dietetics*. Elbs Churchill.
- Pike RL & Brown ML. 1988 *Nutrition - An Integrated Approach*. John Wiley & Sons.
- Proceedings of the Nutrition Society of India*, NIN, Hyderabad.
- Robinson CH & Lawler MR. 1986. *Normal and Therapeutic Nutrition*. Macmillan.
- Shills ME, Olson JA, Shike M & Ross AC. 1999 *Modern Nutrition in Health and Disease*. Williams & Wilkins.

Swaminathan MS. 1985. *Advanced Text Book on Food and Nutrition* Vols. I, II. The Bangalore Printing & Publ. Co.

FN 503 FOOD ANALYSIS 1+3

Objective

To acquaint the students with principles, techniques and application of different methods of analysis for various nutrients. .

Theory

UNIT I

Familiarization to terms and calculations used in preparation of various standard solutions. Sample and sampling techniques.

UNIT II

Principles, techniques and applications of colorimetric, spectrophotometer and atomic absorption spectrophotometer.

UNIT III

Principles, techniques and applications of spectrophotometer fluorimetry, flame photometry and electrophoresis.

UNIT IV

Principles techniques and application of chromatography (paper chromatography, TLC, GLC, HPLC). 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; food adulteration.

Suggested Readings

AOAC 1995. *Association of Official Analytical Chemists*. Washington, DC.
Gruenwedels DW & Whitaker JR 1984. *Food Analysis: Principles and Techniques*. Vols. I-VIII. Marcel Dekker.
Joslyn MA. 1970. *Methods in Food Analysis: Physical, Chemical and Instrumental Methods of Analysis*. Academic Press.
Pomeranz Y & Molean CE. 1977. *Food Analysis Theory and Practice*. AVI Publ.
Sawhney SK & Singh R. 2000. *Introductory Practical Biochemistry*. Narosa.

FN 504 ADVANCES IN COMMUNITY NUTRITION 1+2

Objective

To enable the students to understand the nutritional problems of the community and gain skills in planning, executing and evaluating nutrition projects of the community.

Theory

UNIT I

Assessment of the nutritional status at individual, household and institutional level: direct and indirect methods.

UNIT II

Ecological, socio-cultural, economic and demographic correlations of malnutrition; prevalence, etiology, biochemical and metabolic changes in vitamin A deficiency, PEM, iron deficiency anemia, IDD.

UNIT III

Major nutritional problems of the state, nation and world. Nutrition intervention- Definition, importance, methods of nutrition intervention and their impact evaluation.

UNIT IV

National nutritional programmes and policies; nutritional surveillance. National programmes and policies regarding food production and distribution.

Practical

Market survey for food availability and their cost; development of low cost nutritious recipes suitable for various vulnerable groups; visit to the ongoing public health nutrition programme and report writing; Techniques of assessment of nutritional status.

Project Work:- Studying existing diet and nutrition practices, planning and conducting survey, analyzing data and writing report; development, implementation and evaluation of community nutrition and health programmes.

Suggested Readings

- Gopaldas T & Seshadari S. 1987. *Nutrition Monitoring and Assessment*. Oxford University Press.
- Jeannette B Endres. 1990 *Community Nutrition Challenges and Opportunities*. Merrill.
- Jelliffe DB. 1966. *The Assessment of the Nutritional Status of the Community*. WHO.
- Jolliffe N. 1962. *Clinical Nutrition*. Hoeber Medical Division.
- McLaren DS. 1977. *Nutrition in the Community*. John Wiley & Sons.
- Nutrition Foundation of India Bulletin*. New Delhi.
- Nutrition News*. NIN, Hyderabad .
- Park JE & Park K. 2000. *Text Book of Preventive and Social Medicine*. Banarsidas Bhanot Publ.
- Rao BSN, Deosthale YG & Pant KC. 1998 (Revised and updated). *Nutritive Value of Indian Foods* by Gopalan C, Ramashastry BV & Balasubramaniam SC. NIN, Hyderabad.
- Shukla PK. 1982. *Nutritional Problems of India*. Prentice Hall of India.

FN 505

FOOD PROCESSING TECHNOLOGY

3+0

Objective

To know processing technology of various food stuffs, physical and chemical principles in food processing and ways of quality control, waste disposal and sanitation in food industries.

Theory

UNIT I

Principles underlying food processing operations including thermal, radiation, refrigeration, freezing and dehydration. Effect of processing on physicochemical characteristics.

UNIT II

Processing technology for preservation and production of variety food products, losses during storage, handling and processing of cereals and legumes, oilseeds, fruits and vegetables.

UNIT III

Processing technology for milk and milk products, egg, meat, poultry and fish, convenience foods, processed foods. Technologies underlying in mutual supplementation, enrichment and fortification, fermentation, malting, germination. Food additives commonly used in food industries for color, flavor, and as preservatives.

UNIT IV

Quality control in food industry: raw material , finished products. Waste management and sanitation in food industries. Packaging of foods. Storage and marketing of processed foods.

Suggested Readings

- Desrosier NW & Desrosier JN. 1977. *The Technology of Food Preservation*. AVI Publ.
- Frank AP. 1987. *Modern Processing, Packaging and Distribution System for Foods*. AVI Van nonstand Reinhold Co.
- Frazier WC. 1988. *Food Microbiology*. Tata McGraw Hill.
- McWilliams M. 1993. *Foods - Experimental Perspectives*. Macmillan.
- Potty VH & Mulky MJ. 1993. *Food Processing*. Oxford & IBH.
- Srilakshmi B. 2001. *Food Science*. New Age International.
- Swaminathan MS. 1993. *Food Science and Experimental Foods*. Ganesh & Co.

FN 506

CLINICAL NUTRITION

2+2

Objective

To familiarize students about estimation of RDA, deficiency of nutrients, estimation of different nutrients and metabolites in normal and diseased conditions.

Theory

UNIT I

Methods for estimating requirements and recommended allowances of energy, protein, minerals and vitamins for different age groups and physiological states.

UNIT II

Nutrient interrelationship; historical background, epidemiology, preventive and therapeutic measures of protein energy malnutrition.

UNIT III

Interrelationship, etiology and preventive measures of vitamin and mineral deficiencies toxicities.

UNIT IV

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.

Practical

Biochemical analysis of blood under normal and diseased conditions for glucose, calcium, iron, creatinine, 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.

Suggested Readings

- Anderson L, Dibble MV, Turkki PR, Mitchel HS & Rynbergen H. 1982. *Nutrition in Health and Disease*. JB Lippincott Co.
- ICMR 1998. *Recommended Dietary Allowance for Indians*. ICMR.
- Khanna K, Gupta S, Seth R & Puri S. 1997. *Text Book of Nutrition and Dietetics*. Phoenix Publ.
- Oser H. 1969. *Physiological Chemistry*. Tata McGraw Hill.
- Raghuramalu N, Nair KM & Kali Sundram S. 1983. *A Manual of Laboratory Techniques*. NIN Hyderabad.
- Srilakshmi B. 2002. *Nutrition Science*. New Age International.
- Swaminathan M. 1988. *Principles of Nutrition and Dietetics*. BAPPCO.

FN 507

NUTRITION DURING LIFE CYCLE

3+0

Objective

To enable the students to know physiological changes and nutritional requirements during various stages of life cycle.

Theory

UNIT I

Adulthood: sex, occupation, income. Pregnancy: physiological changes in pregnancy, weight gain during pregnancy, food and nutrient requirements, storage of nutrients during pregnancy and impact of good nutrition on the outcome of pregnancy, complications of pregnancy and their nutritional management. Lactation: Physiology of lactation, impact of nutrition on efficiency and milk production, food and nutrient requirements during lactation.

UNIT II

Infancy: role of nutrition on physical and mental development, rate of growth - weight as an indicator, assessment of growth, nutrient requirement during infancy, feeding of infants – value of breast feeding, breast milk composition, breast feeding Vs artificial feeding, types of milk and their use in infant feeding, methods of formula preparation, weaning and supplementary foods, weaning practices in the community, special nutritional concern in infant feeding, feeding the premature and low birth weight infants. Nutritional disorders and common ailments in infancy, feeding the sick child, immunization schedule and growth charts.

UNIT III

Preschool age: growth and development – Physical and mental, prevalence of malnutrition in preschool years and food habits, nutritional requirements during preschool year and supplementary foods. School age: growth and development, nutritional requirements of school age children, specific problems in feeding school children.

UNIT IV

Adolescence: physical and physiological changes, nutritional requirements of adolescents, Food preferences and nutritional problems. Elderly: physical and physiological changes, nutritional requirement, problems of old age, nutrients influencing aging process.

Suggested Readings

- Anderson L, Dibble MV, Turkki PR, Mitchell HS & Rynbergen HJ. 1982. *Nutrition in Health and Disease*. JB Lippincott Co.
- Beal VA. 1980. *Nutrition in the Life Span*. John Wiley & Sons.
- Falkner F & Tanner JM. 1978. *Human Growth*. Vols. I-III. Plenum Press.
- FAO/WHO/UNU. 1985. *Energy and Protein Requirement*. Tech. Report 724. WHO.
- Ghosh S. 1988. *The Feeding and Care of Infant and Young Children*. Voluntary Health Association of India, New Delhi.
- Guthrie HA. 1989. *Introductory Nutrition*. Times Mirror/Mosby College Publ.
- ICMR. 1990. *Nutrient Requirement and Recommended Dietary Allowance for Indians*. A Report of Expert Group of the ICMR, NIN, Hyderabad.
- Khetarpaul N, Katyal Sudha K & Grover I. 2001 *Infant Health and Nutrition*. Agro Tech. Publ. Academy.
- Krause MV & Mahan LK. 1990. *Food, Nutrition and Diet Therapy*. WB Saunders.
- Robinson CH & Lawler MR. 1986. *Normal and Therapeutic Nutrition*, McMillan.
- Williams SR, Worthington RS, Sneholinka ED, Pipes P, Ress JM & Mahal KL. 1988. *Introduction Nutrition throughout the Life Cycle*. Times Mirroe/Mosby College Publ.

FN 508

NUTRITION AND PHYSICAL FITNESS

2+1

Objective

To enable the students to know the recent techniques of body composition and energy metabolism for the assessment of nutritional status.

Theory

UNIT I

Overview of nutritional management vis-a-vis physical fitness, body composition and physical fitness.

UNIT II

Methods of measuring body composition: direct and indirect. Body composition in different physiological conditions and factors affecting it.

UNIT III

Energy metabolism and physical fitness: concept, importance, influencing factors.

UNIT IV

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.

Practical

Project relevant to text: selection of topic, planning of project, development and standardization of tool, collection of data, analysis of data, report writing.

Suggested Readings

- Falkner F & Tanner JM. 1978. *Human Growth - Principles and Prenatal Growth*. Vol. I. Bailliere Tindall.

- Falkner F & Tarnner JM. 1980. *Human Growth Methodology. Ecological, Genetic, and Nutritional Effects on Growth*. Vol. III. Plenum Press.
- Passmore R & Eastwood MA. 1986. *Human Nutrition and Dietetics*. ELBS Churchill Livngstone.
- Pike RL & Brown ML. 1988. *Nutrition - An Integrated Approach*. John Wiley & Sons.

FN 509 ADVANCED DIET THERAPY 2+1

Objective

To familiarize the students with newer concepts in dietary management of various disorders and diseases.

Theory

UNIT I

Role of dietician in a health care team in hospital and community. Newer concepts in dietary management of various nutritional disorders and disease conditions: fevers, infections.

UNIT II

Dietary management during burns, allergy, gastrointestinal and liver diseases.

UNIT III

Dietary management of cardiovascular diseases, renal disorders and obesity.

UNIT IV

Dietary management of diabetes, cancer and HIV. Nutrition in critical care.

Practical

Formulation of food exchanges. Therapeutic modifications of diet in terms of nutrients, consistency and composition for various disorders and diseases. Preparation of SOAP notes and case studies. Visits to hospitals.

Suggested Readings

- Robinson, Lawler, Chenoweth & Garwick, 1987. *Normal & Therapeutic Nutrition*. 17th Ed. Macmillan Publishing Co.
- Shills ME & Young VR. *Modern Nutrition in Health & Disease* 7th Ed. Lea & Febiger.
- Stanfield PS, Hui YH & American Dietetics Association 1992. *Nutrition & Diet Therapy*. 2nd Ed. Jones & Bartlett Publ.

FN 510 FOOD TOXICOLOGY 2+0

Objective

To enable the students to understand the toxic substances present in the foods and processing techniques for removal of toxins from foods.

Theory

UNIT I

Introduction and significance of food toxicology. Food poisoning: types, causative factors, preventive symptoms, natural food toxins, antinutritional factors, other food toxins, harmful effects, methods of removal.

UNIT II

Microbial toxins and food intoxications. Source of contamination Effect on health, preventive measures, methods of inactivation/destruction.

UNIT III

Chemical toxins: Pesticides, insecticides metallic and others, residual effects, preventive measures, methods of removal.

UNIT IV

Food packaging material, potential contaminants from food packaging material. Food laws and standards: FPO, ISI, Ag Mark, Codex Alimentarius, ISO, mark for vegetarian and non vegetarian foods, ecofriendly products and others in operation.

Suggested Readings

Ayres JC. 1968. *The Safety of Foods*. AVI Publ.

Hayes WJ. 1975. *Toxicology of Pesticide*. The Willams & Wilkins Co.

Jacob T. 1976. *Food Adulteration*. Sib Wasani Macmillan Co.

Swaminathan MS. 1985. *Advanced Text Book on Food and Nutrition*. Vol II. The Bangalore Printing & Publ. Co.

FN 511

ADVANCED HUMAN PHYSIOLOGY

2+1

Objective

To enable the students to understand the anatomy and functions of human body and techniques/methods of blood and urine analysis.

Theory

UNIT I

Reticulo- endothelial system: functions, classification. Lymphatic system: functions, circulation. Circulatory System: blood - composition blood cells - development and function of blood cells, blood clotting, blood grouping and hemoglobin, Heart: anatomy, cardiac cycle, blood pressure and factors affecting blood pressure.

UNIT II

Respiratory system: anatomy, physiology and mechanism of respiration, regulation of respiration. Digestive system: anatomy of gastrointestinal tract and accessory organs. Digestion and absorption of food, regulation of appetite.

UNIT III

Excretory system: anatomy and functions of kidney, formation, composition and excretion of urine. Endocrine glands, mode of action of hormones.

UNIT IV

Reproductive system: structure and functions of male and female reproductive organs. Nervous system: anatomy and functions, Musculo skeletal system: anatomy and functions.

Practical

Estimation of hemoglobin. Identification of blood groups. Preparation of blood slide, identification and counting of blood cells. Haematocrit and sedimentation rate. Measurement of blood pressure. Examination of abnormal constituents of urine Estimation of glucose and cholesterol in blood.

Suggested Readings

Best CH & Taylor NB. 1989. *The Human Body*. ASI Publ. House. (Source: National Book Depot, Bombay).

Chatterjee CC. 1992. *Human Physiology*. Vols. I , II. Medical Allied Agency.

- Guyton AC. 1991. *Text Book of Medical Physiology*. WB Saunders.
 Mukherjee KL. 1994. *Medical Laboratory Technology*. Vol I. Tata McGraw Hill.
 Wilson KJW & Ross JS.1987. *Ross and Wilson Anatomy and Physiology in Health and Illness*. 6th Ed. Churchill Livingstone.

FN 512 FOOD SERVICE MANAGEMENT 1+2

Objective

To enable the students to understand the process of planning, organizing and controlling the management of food and other resources in institutions.

Theory

UNIT I

Types of food services. Organization: Definition, types. Management: tools of management.

UNIT II

Personnel management. Books, records and record keeping. Cost control in food services. Menu planning.

UNIT III

Meal services management: types of services. Quantity food production: Principles involved in development of recipes in large scale cooking, Standardization of recipes, Utilization of left over foods.

UNIT IV

Planning of layout and equipment for foods services. Sanitation and hygiene in handling foods. Personnel hygiene and its importance.

Practical

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

Suggested Readings

- Fuller J. 1966. *Chefs Manual and a Kitchen Management*. B.T. Badtsford Ltd.
 Kazarian EA. 1975. *Food Service Facilities - Planning*, AVI Publ.
 Kotschevar LH. 1961. *Food Service, Layout and Equipment Planning*. John Wiley & Sons.
 Sethi M & Malhan S. 1997. *Catering Management - An Integral Approach*. New Age Internationl.
 Treat N & Richards 1997. *Quantity Cookery*. Little Brown & Co.
 West BB, Wood L, Harger VF & Shugart GS. 1977. *Food Service in Institutions*, John Wiley & Sons.

FN 513 FOOD PRODUCT DEVELOPMENT 1+1

Objective

To enable the students to understand the concept of product development, their sensory evaluation and quality control.

Theory

UNIT I

Basic principles of food product development. Sensory properties of food and their role in product development. Formulation and evaluation of recipes at laboratory level. Bulk food preparation for food institutions and enterprises: servings, nutritive value and costing.

UNIT II

Evaluation of food- Objective and subjective methods, selection and training of judges, development of score cards and analysis of data.

UNIT III

Consumer evaluation-development of schedule and data analysis. Packaging material, types for different products. Food labeling.

UNIT IV

Food safety issues in product development, food quality regulations and standards, quality control and HACCP. Product formulation and development for general and therapeutic use.

Practical

Sensory evaluation, methods, training of judges, score card preparation. Selection and modification of food product to be developed. Formulation and standardization of products. Objective and subjective evaluation of the products. Evaluation of consumer acceptability. Packaging and sale of products. Preparation of video film for media.

Suggested Readings

- Altschul Aaron M. 1993. *Low Calorie Foods*. Marcel Dekker
Goldberg I. 1994. *Functional Foods: Designer Foods, Pharma Foods, Nutraceuticals*. Springer.
Matz SA. 2004. *Formulating & Processing Dietetic Foods*. CHIPS Publ.

FN 514

NUTRITION AND IMMUNITY

2+0

Objective

To make the students understand the importance of various nutrients in maintaining and improving the immunity of individuals.

Theory

UNIT I

Immunity: definition and history. Classification, immunological responses, cell types involved. Mechanism of phagocytosis and antigen-antibody reactions. Regulation of immunity. Mucosal defence system- effect of nutrients.

UNIT II

Effect of malnutrition on immunity. Carbohydrates and immune system. Fat and immune system- factors affecting acquired immunity. Protein and immune functions- effect of arginine, glutamine and sulphur amino acids. Glutathione and immune system.

UNIT III

Role of vitamins in immune functions-effect of deficiency. Role of minerals-effect of deficiency and excess on immune cell functions.

UNIT IV

Probiotics and antioxidants – their effect on immune function. Immunity against infection – role of immunization.

Suggested Readings

- David A, Darlington G & Bendich A. 2004. *Diet and Human Immune Function*. Humana Press.
- Huffer T, Kanapa T & Stevenson GW. 1986. *Introduction to Human Immunology*. Jones & Bartlett.
- Wise DJ & Carter GR. 2004. *Immunology - A Comprehensive Review*. Iowa State University Press, Blackwell Science Co.

FN 601 ADVANCES IN CARBOHYDRATES, PROTEINS 3+1 AND LIPIDS

Objective

To acquaint the students with recent developments in the role of carbohydrates, proteins and lipids in normal and diseased conditions.

Theory

UNIT I

Carbohydrates, proteins and lipids-their digestion, absorption, metabolism. Inborn errors of metabolism.

UNIT II

Metabolic disorders-diabetes, dental caries, obesity, atherosclerosis, hyperlipidemias and hypertension. Glucose homeostasis determined by insulin/glycogen ratio; carbohydrates free diet and its metabolic consequences; glycolic index; dietary fiber- its definition, composition, classification, functions and role in various physiological disorders.

UNIT III

Classification of protein, new discoveries in protein and their functions such as protein in Immune system, as lubricants, biological buffers and carriers, evaluation of protein quality: in vitro and in vivo methods, animal and human bioassays: amino acid pool, protein turnover in man with special reference to body size, age and various nutrition and pathological conditions, regulation of proteins, requirements; novel food sources of protein. Effect of insulin, corticosteroids, thyroids, androgen and growth hormone on protein metabolism, inheritable disorders of amino acid metabolism of protein; effect of dietary protein on cardiovascular disease and cholesterol metabolism, adaptation of body to low intake of energy and protein.

UNIT IV

Estimation of body fat; lipoproteins and hyper lipoproteinemia; hypolipidemic action of PUFA omega-3 fatty acids and oxidation products of cholesterol; lipids and cancer; fish oils in health and disease; oxidation products of cholesterol. Disturbance in lipid metabolism; role of reversal diet in cardiovascular disorders; high blood cholesterol – causes, prevention and treatment; hypolipidemic action of rice bran, oat, barley and legumes.

Practical

Assessment of protein quality; project work related to metabolic disorders of proximate principles; blood analysis in relation to NCD and estimation of amylase and protease inhibitors in foods.

Suggested Readings

- Akoh CC & Min DB. 1998. *Food Lipids - Chemistry, Nutrition and Biotechnology*. Marcel Dekker.

Theory

UNIT I

General definition and history of minerals; causes of macro and micro mineral deficiencies in India. Chronology, chemistry, distribution, functions, absorption, transport, metabolism, deficiency manifestations.

UNIT II

Nutritional requirements, methods of assay of all the minerals. Interactions of minerals with other nutrients, antagonists and analogues of minerals.

UNIT III

Assessment of mineral status of population, mineral fortification and supplementation; major mineral pollutants- their harmful effect to health; mutagenicity, carcinogenicity, teratogenicity, heavy metal toxicity. Use of mineral isotopes/ tracers in nutritional studies.

UNIT IV

Metalloenzymes; 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.

Practical

Assessment of antioxidants in foods; Project to combat micro nutrient deficiencies- Vulnerable sections, Groups with special needs.

Suggested Readings

Basu TK & Dickerson JWT. 1996. *Vitamins in Human Health and Disease* CABI.

Boyd LO' Dell & Sunde RA. 1997. *Handbook of Nutritionally Essential Mineral Elements*. CRC Press.

Causing 2005. *Annual Review of Nutrition*. Vol. 25.

Comb GF. 1992. *The Vitamins, Fundamental Aspects in Nutritional and Health*. Academic Press.

Kutsky RJ. 1981. *Handbook of Vitamins of Minerals and Hormones* NRC.

Machlin LJ. 1991 *Handbook of Vitamins*. Marcel Dekker.

Monier Willam GW. 2008. *Trace Elements in Foods*. Agribios.

Taylor SL. 2007 *Advances in Food and Nutrition Research*. Vols. 1-52. Research Books & Pvt. Ltd.

FN 604

ADVANCES IN FOOD SCIENCE AND TECHNOLOGY 2+1

Objective

To acquaint the students with latest advances in nutrition and food science and food challenges in next millennium.

Theory

UNIT I

Recent advances in the field of carbohydrates, lipids, proteins, vitamins and minerals in relation to human nutrition.

UNIT II

Nutrogenomics, incorporating genetics into dietary guidance. Recent advances in the field of food analysis and food fortification.

UNIT III

Foods of future; special nutrients. Food processing and product development; regulating food processing and preservation through TQM and HACCP.

UNIT IV

GM foods and their health implications; functional foods and organic foods, impact of WTO in food regulation.

Practical

Product development and shelf life of nutritionally fortified foods using advanced technologies, field study of food processing and preservation in relation to TQM and HACCP in an industry.

Suggested Readings

Manay NS & Shadaksharaswamy 1997. *Food Facts and Principles*. New Age Publ.

Potter N & Hotchkiss JH. 1996. *Food Scienc* . 5th Ed. AVI Book Van.

Potty VH & Mulky MJ. 1993. *Food Processing*. Oxford & IBH.

Srilakshmi B. 2002. *Nutrition Science*. New Age Publ..

Swaminathan MS. 1993. *Food Science and Experimental Foods*. Ganesh & Co.

FN 605

ADVANCES IN ENERGY METABOLISM

2+0

Objective

To familiarize the students with new developments in the area of energy metabolism and its relation to human health.

Theory

UNIT I

Scope and application of bioenergetics for human nutrition; energy types, energy store in man, its components and measurements.

UNIT II

Methods of estimation of energy requirement; factors affecting energy requirements and expenditure.

UNIT III

Thermogenesis; interrelationship between metabolic regulation. Mechanism of hunger and its energy cost of macromolecules.

UNIT IV

Weight control and obesity-role of adipose tissues. Effect of hormones on energy metabolism.

Suggested Readings

Lehninger AL & Benjamin WA. 1971 *Bioenergetic*. Meulo Park.

Causing 2005. *Annual Review of Nutrition*. Vol. 25.

Taylor SL.2007. *Advances in Food and Nutrition Research*. Vol- 1-52. Researcho Books.

FN 606

NUTRITION AND AGRICULTURE INTERFACE

3+0

Objective

To acquaint the students with food production and consumption trends, food balance sheet and interrelationship between nutrition and agriculture development.

Theory

UNIT I

Food situation in India and in the world, food production and consumption trends; food balance sheets. Role of nutrition in agricultural planning and national development.

UNIT II

Linkages between agricultural practices; food production, food distribution and nutritional status; food crop failure and malnutrition; poverty and vicious cycle of low food production ; consumption indicators, nutritional status indicators and their role in agricultural planning.

UNIT III

Agricultural development and its effect on food availability; effect of food production and economic policies on food availability; impact of physical resources, farming systems, cropping system, inputs and manipulation, agricultural marketing system, post harvest processing of foods on food and nutrition situation; food distribution systems .

UNIT IV

Food and nutrition security at national and household level; nutrition policy implementation; nutritional impact of agricultural programmes, food price control and consumer subsidy; contribution of national and international organization for agricultural development.

Suggested Readings

- Bhatia MS. 1991. *Agricultural Statistics at a Glance*. Ministry of Agriculture, Govt. of India, New Delhi.
Census 1981, 1991, 2001.
India 2001. A Reference Annual. Publication Division, Ministry of Information about Broad casting, Govt. of India.
UNICEF 1999. *The State of World's Children*. Oxford University Press.

FN 607

NUTRITION IN EMERGENCIES

2+0

Objective

To acquaint the students with latest advances in management of food and nutrition in emergent situations.

Theory

UNIT I

Starvation in emergencies arising out of drought, floods, earth quakes, locust, war, wrong policies and poverty; historical perspectives.

UNIT II

Effect of inanition, short, medium and long term emergencies on food and nutrients intake, precautions against food shortage. Food needs at national level during normal emergencies,

UNIT III

Major nutritional deficiency diseases in emergencies; mobilization of local resources; general fund distribution; mass and supplementary feeding; therapeutic feeding; social funds.

UNIT IV

Control of communicable diseases; public health and hygiene problems during emergencies.

Suggested Readings

- Messer E, Mark J, Cohen C & Jashinta D. 1998. *Food from Peace: Breaking the Links between Conflicts and Hunger*. IFPRI, Washington.
Spark A. 2007. *Nutrition in Public Health: Principles, Policies and Practice*. CRC Press.
The Management of Nutrition in Major Emergencies. 2000, WHO.

FN 608

**APPLICATION OF BIOTECHNOLOGY IN FOODS 2+0
AND NUTRITION**

Objective

To acquaint the students with recent advances in role and application of biotechnology in Foods and Nutrition.

Theory

UNIT I

History, processes and products of biotechnology; application of biotechnology in production of nutritious foods.

UNIT II

Role of biotechnology in enzymology and product development, fermentation process, fruit juice extraction, genetic improvement of food grade microorganisms.

UNIT III

Nutritional significance of food products developed by biotechnological techniques.

UNIT IV

Scientific, technological and resource constraints on biotechnology; important factors affecting development in biotechnology.

Suggested Readings

Nestle M. 2003. *Safe Food: Bacteria, Biotechnology and Bioterrorism*. University of California Press.

Rogers PL & Fleet GH. 1989. *Biotechnology and Food Industry*. University of Minnesota.

FN 609

GLOBAL NUTRITIONAL PROBLEMS

2+0

Objective

To enable the students to know the global nutritional problems and intervention programmes.

Theory

UNIT I

Food consumption pattern of developed and developing countries.

UNIT II

An overview of world nutrition situation and assessment of problems of developing countries in light of prevalence, etiology, Indicators and preventive measures.

UNIT III

An overview of world nutrition situation and assessment problems of developed countries in light of Prevalence, etiology, indicators and preventive measures.

UNIT IV

Nutrition and health programmes to alleviate malnutrition; role of national and international organizations.

Suggested Readings

Anderson L, Dibble MV, Turkki PR, Mitchell HE & Pynbergen HJ. 1982. *Nutrition in Health and Disease*. JB Lippincott Co.

Jelliff BD. 1966. *The Assessment of the Nutritional Status of the Community*. WHO.

Jolliffe N. 1962. *Clinical Nutrition*. Hoeber Medical Division.

Mclaren DS. 1983. *Nutrition in the Community*. John Wiley & Sons.

Park JE & Park K. 2000. *Text Book of Preventive and Social Medicine*. Barnasidas Bhanot Publ.
 SCN News, United Nations. *System Forum on Nutrition*. WHO.
 Shukla PK. 1982. *Nutritional Problems of India*. Prentice Hall of India.

FN 610 MATERNAL AND CHILD NUTRITION 2+1

Objective

To enable the students to understand the role of nutrition during pregnancy, lactation and infancy.

Theory

UNIT 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 .

UNIT II

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.

UNIT III

Nutritional problems and requirements of preschool and school going children; growth and development of children; growth monitoring using growth charts.

UNIT IV

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.

Practical

Preparation of a database on prevailing supplementary and weaning practices- planning, collecting data, analyzing data, writing report; preparation of low cost complementary foods. Analysis of weaning/complementary foods for its nutrient content.

Suggested Readings

- Bamji MS, Rao NP & Reddy V.1999. *Text Book of Human Nutrition*. Oxford & IBH.
 Falkner F & Tanner JM. 1978. *Human Growth - Postnatal Growth and Neurobiology*. Vol. II. Plenum Press.
 Falkner F & Tanner JM. 1986. *Human Growth - A Comprehensive Treatise*. Development Biology Press.
 Falkner F & Tanner JM. 1986. *Human Growth – Methodology, Ecological, Genetic and Nutritional Effects on Growth*. Vol. III. Plenum Press.
 Francis DEM. 1986. *Nutrition in the Life Span*. John Wiley & Sons.
 NNMB Reports
 Sachdeva HPS & Choudhary P. 1994. *Nutrition in Children*. Cambridge Press.
 Williams SR, Worthington RS, Sneholinka ED, Pipes P, Ress JM & Mahal KL. 1988. *Nurition Throughout the Life Cycle*. Times Mirror/Mosby College Publ.
 Ziegler EE & Filer LJ. 1996. *Present Knowledge in Nutrition*. International Life Science Institute, Washington, D.C.

FOODS AND NUTRITION

List of Journals

- **Plant Foods for Human Nutrition**
 - Kluwer Academic Publisher, P.O. Box 322, 3300, AH Dordrecht, The Netherland
- **Journal of Food Science and Technology**
 - Association of Food Scientists, CFTRI, Mysore 570013 (India)
afsti@soncharnet.in
- **Nutrition and Food Science**
 - www.emeraldinsight.com/authors
- **Food Chemistry**
 - Professor Gordon Birch, School of Food Biosciences, University of Reading, Whiteknights, Po Box 226, Reading RG6 6AP, UK
- **Journal of Human Nutrition and Dietetics**
 - Dr. Joan Gandy, Centre for Health Studies, Buckinghamshire Chilterns University College Gorelands Lane, Bucks, HP84AD, UK
- **International Journal of Food Science and Technology**
 - wttp://mc.manuscriptcentral.com.ijfst
- **Journal of Indian Dietetic Association**
 - Editor-in-chief, Department of Biochemistry & Nutrition, All India Institute of Hygiene and Public Health, 110 C.R. Avenue, Kolkata – 700 073
- **International Journal of Food Science and Technology**
 - Blackwell Publishing Ltd. 9600 Garsington Road, Oxford, Ox42D.
- **Indian Food Packer**
 - K.P. Sareen, Executive Editor, All India Food Processors Association, 206, Aurobindo Place, Havzkhas, New Delhi
- **Trends in Food Science and Technology**
 - Elsevier Ltd., The Boulevard, Langfordlane, Kidlington, Oxford OXs 1GB, UK
- **European Journal of Clinical Nutrition**
 - JC Seidell, Free University, Amsterdam, The Netherlands.
- **Association of Food Scientists and Technologists (India) Mysore**
 - E-mail: aftsi@sancharnet.in www.aftsi.org.
- **Journal of the Science of Food and Agriculture**
 - www.interscience.welley.com/jsfa

e-Resources

- www.eatright.org/
- www.fda.gov/search.html
- www.nutrition.about.com
- www.lifelines.com/ntnlk.html
- www.fda.gov
- www.nal.usda.gov/fnic/dga
- www.nal.usda.gov/fnic/fpyr/pyramid.html
- www.diabetes.org
- www.5aday.com
- www.ificinfo.health.org/infoFN.htm
- www.fascb.org/asns/intro.html

- www.osteo.org
- www.ironoverload.org
- www.bookman.com.au.vitamins
- www.thriveonline.com/eats/vitamins/guide.index.html
- www.altmedicine.com/
- www.ncahf.org
- www.nal.usda.gov/fnic/foodcomp
- www.niddk.nih.gov/health/nutrit/nutrit.htm
- www.fda.gov/cder
- www.acsm.org
- www.cdc.gov/nccdphp
- www.nih.gov/od/oar
- www.americanheart.org
- www.nhlbi.nih.gov/index/htm
- www.cancer.org
- www.aice.org
- www.eatright.org/nfs42.html
- www.foodsafety.org
- www.safefood.org
- www.fao.org
- www.who.org/nut
- www.wfp.org
- www.worldbank.org

Suggested Broad Topics for Master's and Doctoral Research

- Diet and nutrition surveys of vulnerable sections of specific district
- Nutritional improvement and utilization of pearl millet and soybean in Indian dietaries
- Weaning/supplementary mixture for infants and pre school children
- Value added products from cereals and pulses
- Development and nutritional evaluation of β -carotene and iron rich products from amaranth, fenugreek, spinach and unconventional vegetables
- Development of foods for diabetes and old persons
- Development of fiber rich food products
- Development and nutritional evaluation of probiotic foods for controlling diarrhea
- Development and nutritional evaluation of value added products supplemented with crude palm oil and the vegetable oils
- Development and nutritional evaluation of value added products using medicinal plants and to test their efficacy against blood sugar and cholesterol level in animals and human beings
- Nutritional evaluation of under-utilized foods of India and incorporation in traditional diets to improve their nutritional quality
- Dietary survey of patients suffering from various diseases like, heart disease, liver disease, kidney disorder etc.
- Nutritional evaluation of new crop varieties and preparation of value added products

FAMILY RESOURCE MANAGEMENT
Course Structure - at a Glance

CODE	COURSE TITLE	CREDITS
FRM 501*	APPROACHES TO RESOURCE MANAGEMENT	3+0
FRM 502*	CONSUMER ERGONOMICS	2+1
FRM 503*	ADVANCED INTERIOR SPACE MANAGEMENT	2+1
FRM 504*	ADVANCED HOUSING	2+1
FRM 505	CONSUMER ISSUES AND CHALLENGES	2+1
FRM 506	CONSUMER GUIDANCE AND COUNSELING	1+2
FRM 507	CONSUMER COMMUNICATION MEDIA	1+2
FRM 508	PRODUCT DESIGN, TESTING AND EVALUATION	1+2
FRM 509	RETAIL MANAGEMENT	2+1
FRM 510	WORK AND WORK STATION DESIGN	1+2
FRM 511	ADVANCED CAD FOR PRODUCT DESIGN	0+4
FRM 512	ENERGY CONSERVATION IN BUILDING DESIGN	2+1
FRM 513	CONSUMER ECONOMICS	2+1
FRM 514	INTERIOR DESIGN BUSINESS MANAGEMENT	2+1
FRM 515	FURNITURE DESIGN AND FABRICATION	2+1
FRM 516	COLOUR AND LIGHTING IN INTERIORS	2+1
FRM 591	MASTER'S SEMINAR	1+0
FRM 599	MASTER'S RESEARCH	20
FRM 601**	ADVANCES IN RESOURCE MANAGEMENT	3+0
FRM 602**	OCCUPATIONAL BIOMECHANICS	2+1
FRM 603**	GLOBALIZATION AND CONSUMER ECONOMICS	2+1
FRM 604	FAMILY DYNAMICS AND WOMEN POWER	2+1
FRM 605	CONSUMER PRODUCT DESIGN	1+2
FRM 606	ENVIRONMENTAL ISSUES AND CHALLENGES	3+0
FRM 607	MANAGERIAL DIMENSIONS FOR SPECIAL GROUPS	2+1
FRM 691	DOCTORAL SEMINAR I	1+0
FRM 692	DOCTORAL SEMINAR II	1+0
FRM 699	DOCTORAL RESEARCH	45

* Compulsory for Master's programme; ** Compulsory for Doctoral programme

FRM 501 APPROACHES TO RESOURCE MANAGEMENT 3+0

Objective

To acquaint the students with meaning and concepts, processes and significance of management applicable to families.

Theory

UNIT I

Significance and Scope of Resource Management: The evolving discipline of management: Classical Approach; Behavioural Approach; Systems Approach and Scientific Management.

UNIT II

Managerial Decision Making-Techniques; Creativity; rationality and Risk and Certainty. Theories and Concepts in Resource Management.

UNIT III

Management process: Planning- Types and Dimensions; Planning in a systems perspective, Factors affecting planning; Implementation-Controlling, Checking and Adjusting; Evaluation-Evaluation of Resource-Use and Feedback.

UNIT IV

Leadership: Importance and Characteristics Motivation- Importance, theories, approaches, elements of sound motivation; - Organisation, supervision and communication.

Suggested Readings

Deacon R & Firebaugh F. 1981. *Family Resource Management - Principles and Applications*. Allyn & Bacon.

Gross IH, Crandall EW & Knoll MM. 1980. *Management for Modern Families*. Prentice Hall.

Kotler P. 2004. *Principles of Management*. TEE Publ.

Murugan MS. 2005. *Management Principles and Practices*. New Age International.

Seetharaman P, Batra S & Mehram P. 2005. *An Introduction to Family Resource Management*. CBS.

Singh N. 2000. *Principles of Management: Theories, Practices and Techniques*. Deep & Deep.

FRM 502 CONSUMER ERGONOMICS 2+1

Objective

To acquaint students with anthropometry study related to Man, Machine and Environment system interactions and its application in reducing human cost of work.

Theory

UNIT I

Significance and scope of ergonomics – Man, Machine and Environment system interactions – Anthropometry; principles, measurements: Application of Anthropometry in Ergonomics and Design – Human body in relation to Ergonomic study.

UNIT II

Fundamentals of Work Physiology; Muscular efforts, Energy consumption, Body size and movements; Physical fitness: measurement using different techniques.

UNIT III

Mechanical parameters; Work postures Postural variations and discomfort; Measurement - Physical work capacity and factors affecting energy requirements and costs for various activities; fatigue.

UNIT IV

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.

Suggested Readings

- Bridger RS. 1994. *Introduction to Ergonomics*. McGraw Hill.
Dalela S & Saurabh. 1999. *Textbook of Work Study and Ergonomics*, Standard Publ.
Grandjean E. 1978. *Ergonomics of the Home*. Taylor & Francis.
Ian Galer. 1982 *Applied Ergonomics Handbook*. Butterworths & Co.
Panero J & Zelnik M. 1979. *Human Dimension and Interior Space*. Whitney Library of Design.
Singh S. 2007. *Ergonomics Interventions for Health and Productivity*. Himanshu Publ.

FRM 503 ADVANCED INTERIOR SPACE MANAGEMENT 2+1

Objective

To make students understand the new dimensions and future challenges of interior designing and to acquaint them with latest trends in functional designing of space, interiors and surroundings.

Theory

UNIT I

Effect of interior design and decoration on family well being with particular reference to special needs - Functional and aesthetic considerations in use of elements and principles of design.

UNIT II

Advances in design process of residential and commercial interiors.

UNIT III

Trends in decoration treatments for interiors and interior backgrounds from past to present: furniture, furnishings, lighting, fittings and fixtures, surface materials, finishes.

UNIT IV

Changing trends in thermal, acoustics and safety mechanisms. Solutions for problem areas in residential and commercial building interiors.

Practical

Critical analysis of interiors of a selected residential and non-residential buildings and suggested improvements – Visits to building design institutes, hotels, furniture and furnishing show rooms and residential buildings to identify new trends – Market survey of surface materials, finishes, fittings and fixtures – Detailed cost estimation of interior design and decoration elements.

Suggested Readings

- Allen PS, Stimpson MF & Jones LM. 2000. *Beginnings of Interior Environments*. Prentice Hall.
- Choudhari SN. 2006. *Interior Design*. Avishkar Publ.
- Gilliatt M. 1981. *The Decorating Book*. Pantheon Books.
- Panero J & Zelnik M. 1979. *Human Dimension and Interior Space*. Whitney Library of Design.
- Parikh A, Robertson D, Lane T, Hilliard E & Paine M. 2000. *The Ultimate Home Design Source Book*. Conran Octopus.
- Pears A, Lawrence M, Hymers P & Howell J. 2000. *Working with the Professionals*. Marshall Publ.
- Seetharaman P & Pannu P. 2005. *Interior Design and Decoration*. CBS.
- Zimmerman N. 2003. *Home Workspace Idea Book*. The Taunton Press.

FRM 504

ADVANCED HOUSING

2+1

Objective

To acquaint the students with various building features, materials, latest building techniques, vastu sharstra, acoustics, rain water harvesting and landscape planning.

Theory

UNIT I

Historical perspective of the architectural features of buildings - Structural features of residential buildings in different geo-climatic conditions - Social-cultural and economic issues in housing.

UNIT II

Housing stock quality, demand and supply in urban and rural areas of India - Role of Government and non-government organizations in providing and regulating housing needs.

UNIT III

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, sanitary fittings, acoustics - Rain water harvesting structures for houses.

UNIT IV

Estimation of cost and housing finance - Recent developments in building Bye-Laws - Housing research- Landscaping planning.

Practical

Analysis of building forms in different geo-climatic region – Visit to housing development organization and building design centers – Evolving Eco, Ergo and Space saving house plan for selected geo-climatic region for

different socio-economic categories through CAD Estimation of Cost of construction - Assessment of existing house plans and suggesting cost effective renovations - Landscape planning.

Suggested Readings

- Ambadker SN. 2000. *Rural Housing: Agro-socio-economic Impact*. Special Indian Ed. Agrobios.
- Lal AK. 1999. *Handbook of Low Cost Housing*, New Age International.
- Mahadeva M. 2002. *Housing in India: The Situation, Development and Challenges*. Orient Longman Publ.
- Morris EW. 1979. *Housing Family and Society*. John Wiley & Sons.
- RajaRao YN & Subrahmanyam Y. 2002. *Planning and Designing of Residential Buildings*. Standard Publ.

FRM 505 CONSUMER ISSUES AND CHALLENGES 2+1

Objective

To acquaint the students about various consumer issues related to products and services in rural and urban context.

Theory

UNIT I

Consumer in changing trends. Consumer movement. Profile of consumers in India and Abroad. Public and private sector goods and service providers.

UNIT II

Consumer markets: types and features. Market distribution channels.

UNIT III

Consumer behaviour. Consumer problems and challenges. Gender issues in consumerism.

UNIT IV

Multinational trade and consumer welfare in India. Consumer empowerment; Citizens' Charter and Right to information Act.

Practical

Identification of problems of rural /urban consumers. Project work: in-depth study of any one identified problem-finding measures to overcome the problem-developing consumer education material on selected issue.

Suggested Readings

- Blackwell RD, Miniard PW & Engel JF. 2001. *Consumer Behaviour*. Vikas Publ.
- Clarke J, Janet N, Smith EV & Westmarland L. 2007. *Creating Citizen Consumers*. Sage Publ.
- Seetharaman P & Sethi M. 2001. *Consumerism: Strategies and Tactics*. CBS.

FRM 506 CONSUMER GUIDANCE AND COUNSELING 2+1

Objective

To provide knowledge and skill to the students related to consumer protection for rational consumer behavior.

Theory

UNIT I

Consumer Education. Rights and Responsibilities of consumer. Consumer Cooperatives. Consumer Organisations.

UNIT II

Significance of consumer guidance and counseling. Consumer protection measures; legal and non-legal.

UNIT III

Consumer Protection Act, 1986. Consumer Legislations.

UNIT IV

Consumer Redressal mechanism. Consumer Protection Councils.

Practical

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

Suggested Readings

Chadha R. 1995. *The Emerging Concepts and Strategies*. New Age International & Wiley Eastern.

Jones RN. 2007. *Basic Counselling Skills*. Sage Publ.

Marguerite B. 2000. *Consumer Economics: A Multidisciplinary Approach*. John Wiley & Sons.

Schiffman LG & Kaunuk LL. 2004. *Consumer Behaviour*. Prentice Hall of India.

Seetharaman P & Sethi M. 2001. *Consumerism: Strategies and Tactics*. CBS.

FRM 507

CONSUMER COMMUNICATION MEDIA

1+2

Objective

To aware students about the trends and impact of communication media on consumers.

Theory

UNIT I

Significance of consumer communication. Media and social change. Media and consumer demand.

UNIT II

Trends in communication media. Credibility in communication.

UNIT III

Media and gender. Types of media.

UNIT IV

Advertising as a mode of communication: advertising management and legislation, trends and impact of advertising on consumers.

Practical

Exploring the different consumer communication media. Study the impact of print media and electronic media on consumer behaviour. Report writing and presentation. Identifying and developing a communication package on a specific consumer issue. Study the Role of advertising as a mode of communication: Report writing and presentation. Developing a consumer friendly advertisement for a specific product.

Suggested Readings

Potter WJ. 2008. *Media Literacy*. Sage Publ.

- Schmidt WV, Conaway RN, Easton SS & Wardrope WJ. 2007. *Communiacting Globally*. Sage Publ.
- Sharma S & Kumar D. 2001. *Advertising, Planning, Implementation and Control*. Mangal Deep Publ.
- Sparks C. 2008. *Globalization, Development and Mass Media*. Sage Publ.
- Tellis GJ. 2007. *The Sage Handbook of Advertising*. Sage Publ.

FRM 508 PRODUCT DESIGN, TESTING AND EVALUATION 1+2

Objective

To expose students to intricacies in product design and quality control measures for varied consumer products.

Theory

UNIT I

Significance and essentials of product design and consumer demand. Anthropometry in design.

UNIT II

Product services available to consumers. Product safety: hazards and liabilities.

UNIT III

Quality Control and Standardization for food, textiles, consumer durables and materials. Product Certification.

UNIT IV

Need for product testing. Product testing techniques and devices. Product evaluation. Product recall.

Practical

Analyzing the user's option on the design of a specific consumer product. Understanding the selected consumer products through guidelines given by manufacturers. Collecting the standardization norms as per health and safety of workers - Conceptualization and development of consumer products with functional alternatives. Designing the prototype of the developed product by using CAD software. Appraisal on the product testing procedures, Processed foods, textiles, electrical & non- electrical Detecting adulterants in food items electrical equipment - Estimating the device efficiency in electrical and non- electrical Equipment.– Visit to quality control laboratories - Detecting adulterants in food items - computerizing testing data – establishing a consumer product testing cell.

Suggested Readings

- Boothroyd G, Dewhurst P & Knight W. 2002. *Product Design for Manufacture and Assembly*. CRC Press.
- Cross N. 2000. *Engineering Design Methods: Strategies for Product Design*. Reuters Publ.
- Dumas JF & Redish JC. 1993. *A Practical Guide to Usability Testing*. Greenwood Publ.
- Meilgaard M, Civille GV & Carr BT. 2006. *Sensory Evaluation Techniques*. CRC Press.
- Otto KN & Wood KL. 2001. *Product Design: Techniques in Reverse Engineering*, New Age Internatinal.
- Parker G & Alstyne MV. 2005. *Management Science: The Theory of Information Product Design*. INFORMS Publ.

- Roozenburg NFM & Eekels J. 1995. *Product Design: Fundamentals and Methods*, Wiley.
- Sharma DD. 2000. *Total Quality Management*. Sultan Chand and Sons.
- Stone H & Sidel JL. 2004. *Sensory Evaluation Practices*. Academic Press.
- Ulrich KT & Eppinger SD. 1995. *Product Design and Development*. Irwin McGraw Hill.

FRM 509 RETAIL MANAGEMENT 2+1

Objective

To acquaint students with different retailing techniques in view of globalization.

Theory

UNIT I

The retail field: development of retailing; retailers; methods of retailing; geographic distribution of retail sales; expenses of retail establishments; price decisions; retail failures.

UNIT II

Small scale retailing: nature and significance of the small scale retailers; Independent general store; Independent limited line store; miscellaneous types of small scale retailers; measures to overcome competition from big retailers.

UNIT III

Large scale retailing: the chain store- definition, characteristics, growth, factors limiting growth; super market; the department store; the discount house; the retail mail-order house.

UNIT IV

The small scale retailers' efforts to preserve and improve his position: major group activities of small scale retailers; advantages, limitations and future of small scale independent store; trends in retailing and e-tailing- mall concepts in metros.

Practical

Study the functioning of different types of retail stores: small scale retailers, Mobile retailers, Convenience store, General store, Specialty store, Consumer cooperatives; Large scale retailers- Super market, departmental stores, chain stores, Manufacturer's showrooms, Shopping malls, Multiplex. Direct marketing: Telemarketing; Mail order; vending machines; Personal selling- E-shopping.

Suggested Readings

- Kotler P & Keller K. 2006. *Marketing Management*. Dorling, Kundersley (India).
- Kotler P. 2006. *Marketing Management*. Dorling, Kundersley (India).
- Shelekar SA. 2004. *Marketing Management*. Himalaya Publ.
- Velayundhan SK. 2007. *Rural Marketing, Targeting the Non-Urban Consumer*. Sage Publ.

FRM 510 WORK AND WORKSTATION DESIGN 1+2

Objective

To acquaint students with the interrelatedness of work, worker and workstation environments and infuse an interdisciplinary approach to workstation engineering and techniques to reduce human cost of work.

Theory

UNIT I

Work, worker workplace interrelationship – Meaning and components of work: work analysis using different techniques - components of worker input – Body Mechanics.

UNIT II

Functional design: concept – design and arrangement of different work centers

UNIT III

Procedures for studying workplace design: formal and informal techniques – workplace design for different postures.

UNIT IV

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 - Measuring and recording the anthropometric measurements of worker and dimensions of equipment / furniture used in the unit workspace. Measurement of work costs in terms of physiological indices - Preparing floor and perspective plans of a unit work space - Selecting and analyzing a work station in relation to design features, space relationships, dimensions of equipment and furniture, environment control methods and developing 2D and 3D workplace design – Evaluation of existing workstation in a residential and commercial setup and suggesting an ergonomic design layout

Suggested Readings

- Barnes RM. 1980. *Motion and Time Study*. John Wiley & Sons.
Bridger RS. 1994. *Introduction to Ergonomics*. McGraw Hill.
Dalela S & Saurabh. 1999. *Textbook of Work Study and Ergonomics*. Standard Publ.
Grandgean E. 1978. *Ergonomics of the Home*. Taylor & Francis.
Ian Galer. *Applied Ergonomics Handbook*. Butterworths.
Mundel M. 1978. *Motion and Time Study*. Prentice Hall.
Panero J & Zelnik M. 1979. *Human Dimension and Interior Space*. Whitney Library of Design
Singh S. 2007. *Ergonomics Interventions for Health and Productivity*. Himanshu Publ.

FRM 511

ADVANCED CAD FOR PRODUCT DESIGN

0+4

Practical

Introduction to modeling software - REVIT and 3DS Max – Understanding the utility of software to design interiors and exteriors of building and consumer products – Evolving conceptual designs and working out the details for residential and commercial buildings: Creation of surface elements and built-in decorative features - customized designs for special effects - Designing, assembling and modeling consumer products: furniture, lighting fixtures, artifacts - Massing - Rendering and camera animation – Interior and exterior walkthroughs and generating movie file.

Suggested Readings

- Aubin Paul F. 2006. *Mastering Autodesk Revit Building*. Autodesk Press.
Brian L Smith & Padhia R. 2008. *3ds Max Architectural Visualization - Beginner to Intermediate*. Brian Zajac Publ.
Kaleem S, Zaidi A & Siddique S. 2004. *Designing and Design of Residential and Commercial Buildings*. Standard Publ.

FRM 512 ENERGY CONSERVATION IN BUILDING DESIGN 2+1

Objective

To impart knowledge and skills regarding energy efficient architectural designing for residential and commercial needs.

Theory

UNIT I

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.

UNIT II

Factors Influencing building design – Human behaviour in relation to interior and built in design.

UNIT III

Climate and thermal comfort – Design parameters for climate and energy control – Design parameters for Visual comfort: Day lighting and artificial lighting.

UNIT IV

Energy flow audit and economy - Energy models: ENEHOPE Model, BREDEM Model, Econometric Models – 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 – Energy Audit – Estimation of energy requirements in buildings using energy models – Developing conceptual designs for residential and commercial buildings using Green Strategies – Calculation of energy costs.

Suggested Readings

- Hawkes D & Forster W. 2002. *Energy Efficient Buildings: Architecture, Engineering and Environment*. WW Norton & Co.
Jefferis A & Madsen DA. 2004. *Architectural Drafting and Design*, Thomas Delmar Co.
Steffy GR. 2002. *Architectural Lighting Design*. John Wiley & Sons.
Stitt FA. 1999. *Ecological Design handbook: Sustainable Strategies for Architecture*. Mc Graw Hill.

FRM 513 CONSUMER ECONOMICS 2+1

Objective

To impart knowledge about consumer behavior with reference to micro and macro economic system and its impact on consumption behaviour.

Theory

UNIT I

Concept of consumption economics: definition of basic concepts; micro-macro analysis- importance and limitation. Theories of consumer

behaviour: utility analysis; indifference curve analysis; opportunity cost analysis. Elasticity of demand: concept and types.

UNIT II

National income (n.i.): basic terms in accounting National income and its relation to personal disposable income of consumers; the circular flow model; Marginal propensity to consume; concept of multiplier.

UNIT III

Consumption and economic instability: introduction to business cycle; inflation and economic cycle; deflation and economic stability; full employment and inflation.

UNIT IV

Consumer credit and stability; role of government counter cyclical policies and consumers. Measurement of cost of living: the index method. Changes in economy/ policies and its impact on family consumption.

Practical

Study of marketing system of a commodity or service- A project work. Analysis of National Budgets through panel discussion. Analyse the impact of changes in economic policies on family consumption. Learn to calculate the cost of living.

Suggested Readings

- Chadha R. 1995. *The Emerging Concepts and Strategies*. New Age International & Wiley Eastern.
- Marguerite B. 2000. *Consumer Economics: A Multidisciplinary Approach*. John Wiley & Sons.
- Schiffman LG & Kaunuk LL. 2004. *Consumer Behaviour*. Prentice Hall of India.
- Seetharaman P & Sethi M. 2001. *Consumerism: Strategies and Tactics*. CBS.

FRM 514 INTERIOR DESIGN BUSINESS MANAGEMENT 2+1

Objective

To impart knowledge about consumer behavior with reference to micro and macro economic system.

Theory

UNIT I

Definition of a Profession -Principles of Interior Design business management – Establishing Interior Design Practice – ethics and professional conduct.

UNIT II

Business Law – Business management applications: Financial concepts - Strategic plans for design presentation- visual graphics, models, and electronic walkthroughs.

UNIT III

Marketing: Conditions and Strategies –Procedures for contract design.

UNIT IV

Professional portfolios, resumes and business cards, Web page, e-service – Professional associations and support systems.

Practical

Cost estimation for projects ensuing from project conceptualization to completion medium project - contracting and sub-contracting procedure for

the estimated projects - Strategic plan for presentation of project for a tender call - Portfolio for job in professional firm and resume design.

Suggested Readings

Christine M Piotrowski 2001. *Interior Design Management: A Handbook for Owners and Managers*. ASID, IIDA.

Christine M Pitroeski. 2002. *Professional Practice for Interior Designer*. John Wiley & Sons.

Cindy Coleman. 2002. *Interior Design Handbook of Professional Practice*, McGraw Hill.

Terry L Patterson. 2002. *Architects Studio Handbook*, McGraw Hill.

FRM 515 FURNITURE DESIGN AND FABRICATION 2+1

Objective

To provide hands-on experience to students in generating ergo-friendly furniture design and incorporating the same in prototypes, together with workshop exposure.

Theory

UNIT I

Furniture Design in different styles – Furniture for different functions – Furniture decisions.

UNIT II

Human factors in furniture design.

UNIT III

Latest trends in material, furniture construction, assembling and joinery techniques-craftsmanship.

UNIT IV

Decorative finishes-marketing Strategies

Practical

Exploring the different types of furniture, material used and fixation methods through literature search and market exposure- developing concept designs and schematic drawing of selected furniture-working out detailed drawings of components and joineries-building small scale model and sample board-estimating quantity of materials required and cost of construction-workshop experience in furniture designing and construction-exposure to furniture care and maintenance

Suggested Readings

Postell J. 2007. *Furniture Design*. John Wiley & Sons.

Parikh A, Robertson D, Lane T, Hilliard E & Paine M. 2000. *The Ultimate Home Design Source Book*. Conran Octopus.

Panero J & Zelnik M. 1979. *Human Dimension and Interior Space*. Whitney Library of Design

FRM 516 COLOUR AND LIGHTING IN INTERIORS 2+1

Objective

To impress upon students the dynamics of colour and lighting as individual and combined components in interiors and exteriors for special effects.

Theory

UNIT I

Fundamentals of colour and light in interior environments – Theory of colour and light as perceived by the human eye.

UNIT II

Colour: properties, systems, mixing, symbolism, cultural effects and psychology – Physical and perceptual aspects of colour and lighting – 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.

UNIT III

Concepts of lighting - Safety and emergency lighting.

UNIT IV

Effects of colour on people, use of colour and light in interior in relation to function, materials, surface finish and colour scheme integration, Visual tricks to play – space making, space shrinking, camouflage and disguise

Practical

Evolving Munsell and Ostwald colour wheels – 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.

Suggested Readings

Catherine C. 2001. *Colour Healing Home*. Octopus Publ.

Judith M. 2000. *Perior and Regional Style from Around the World*. Clarkson Potter Publ.

Michael W. 2002. *Advances in Colour Harmony & Contrast for the Home Decorator*. School of Colour Publ.

Sarao M & Laurie Z. 1995. *The Power of Colour*. John Wiley & Sons.

FRM 601

ADVANCES IN RESOURCE MANAGEMENT

3+0

Objective

To expose students to classical and neo-classical approaches to management.

Theory

UNIT I

Advances in discipline of resource management: Classical Approach; Behavioural Approach; Systems Approach and Scientific Management.

UNIT II

Managerial Decision Making – Techniques; Creativity; Rationality and Risk and Certainty. Theories and Concepts in Resource Management.

UNIT III

Management process; Planning – Types and Dimensions; planning in a systems perspective, Factors affecting planning; Implementation-Controlling, Checking and Adjusting.

UNIT IV

Evaluation- evaluation of resource-use and feed back; motivation-importance, theories approaches, elements of sound motivation; Leadership-Importance, theories, styles.

Suggested Readings

- Chakravorty P. 2007. *Home Management*. Pointer Publ.
- Gandotra V & Jaiswal N. 2008. *Management of Work in Home*. Dominant Publ.
- Kotler P. 2004. *Principles of Management*. TEE Publ.
- Oberoi K & Sidhu M. 2006. *Resource Management for Better Homes*. Chetna Prakashan.
- Prasad L & Gulshan SS. 2001. *Management: Principles and Practices*. S. Chand & Co.
- Seetharaman P, Batra S & Mehram P. 2005. *An Introduction to Family Resource Management*. CBS.
- Sharma V. 2005. *Modern Home Management*. Shreeniwas Publ.

FRM 602

OCCUPATIONAL BIOMECHANICS

2+1

Objective

To acquaint students about occupational hazards and advances in ergonomics for enhancing job-fitness compatibility.

Theory

UNIT I

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.

UNIT II

Biomechanical oriented ergonomics in different occupation. Relationships of occupations. Occupational stress: causes, measurements and remedies.

UNIT III

Ergonomic task analysis and risk assessment at work places. Tools and techniques to assess and control ergonomic hazards at work places

UNIT IV

Application of biomechanics for occupational safety; accident protection and release of stress. Use of SAMMIE (System for Aiding Man Machine Interaction Evaluation), CAD system in occupational designs.

Practical

Study of Occupational environment and Occupational stress in selected occupations. Work task analysis using ergo software - EVTA (Empirically Validated Task Analysis)/Ergo Master methodology with video for selected activities. Analyse the biomechanics applied in work performance. Identification of accident prone and stressful occupations suggesting remedial performance techniques. Application of EQ (Ergonomic Quality) and IQ (Industrial Quality) in the performance of occupational tasks.

Suggested Readings

- Allen PS, Stimpson MF & Jones LN. 2000. *Beginnings of Interior Environment*. Prentice Hall.
- Bridger RS. 1994. *Introduction to Ergonomics*. McGraw Hill.
- Dalela S & Saurabh. 1999. *Textbook of Work Study and Ergonomics*. Standard Publ.
- Grandjean E. 1978. *Ergonomics of the Home*. Taylor & Francis.
- Ian Galer. *Applied Ergonomics Handbook*. Butterworths.
- Panero J Zelnik. 1979. *Human Dimensions and Interior Space*. The Architectural Press.

Singh S. 2007. *Ergonomics Interventions for Health and Productivity*. Himanshu Publ.

FRM 603 GLOBALIZATION AND CONSUMER ECONOMICS 2+1

Objective

To develop and insight into major economic problems of the country and relate one's role in solving the problems of the consumers.

Theory

UNIT 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 overtime: Diffusion of innovations; Brand loyalty.

UNIT II

Globalization, Liberalization and Privatization- its impact on consumer behaviour. The W.T.O: The issues for consumers. Codex Alimentarius Commision: Its implications for consumers.

UNIT III

The Services: consumer perspective and implications; The inspection into transparency through citizen's charter. Review Government programmes/ Schemes designed to: Increase family financial security; Increase family food security; Generate consumer awareness.

UNIT IV

Consumer Protection: Problems and prospects; Laws and Regulations; Role of Media and Organizations. Managerial and Research implications of consumer issues.

Practical

Conducting case studies highlighting implications of citizen's charter in utilization of services. Designing modules for creating awareness in consumer protection. Planning and implementing consumer guidance and counseling centre. Readings in current consumer and marketing issues and holding panel discussion.

Suggested Readings

David L. 2002. *Consumer Behaviour*. Tata McGraw Hill.

Ghosh AK. 2003. *Jobs and Incomes in a Globalization World*. ILO.

Nayar BR. 2007. *India's Globalization*. Vistaar Publ.

Schiffman LG. 2004. *Consumer Behaviour*. Prentice Hall.

Sharma AK. 2006. *Consumer Behaviour*. Global Vision Publ.

Siddique A. 2007. *India and South Asia-Economic Development in the Age of Globalization*. ME Sharpe.

Sivkumar GD. 2003. *Consumer Protection and Redressal Machinery in India*. Himalaya Publ.

FRM 604 FAMILY DYNAMICS AND WOMEN POWER 2+1

Objective

To create awareness among students about status of women and impact of change in role of women and propose strategies for development and protection at work.

Theory

UNIT 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.

UNIT II

Family dynamics: Theoretical and conceptual framework to study, Family dynamics, 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.

UNIT III

Stress in the family characteristics, category, consequences and need for stress management. Family and social support systems for facilitating women's work participation in categories of labour- family labour, hired labour.

UNIT IV

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.

Practical

Critical review of research studies in India and in developing countries on the role analysis of women. Analysis of aspects of family dynamics in stages of family life. Case studies on management in families with special needs such as families with aged and handicapped people. Coping strategies followed by families in stress management: through case studies. Visit to stress management centers/ counseling centers: report writing. Field study on gender disparity for paid and unpaid activities.

Suggested Readings

- Dasgupta S & Lal M. 2007. *The Indian Family in Transition*. Sage Publ.
Ghadially R. 2007. *Urban Women in Contemporary India*. Sage Publ.
Krishna S. 2007. *Women's Livelihood Rights*. Sage Publ.
Manji F. 2006. *Development and Rights*. Rawat Publ.
Paxton P & Hughes MM. 2007. *Women, Politics and Power*. Pine Forge Press.

FRM 605

CONSUMER PRODUCT DESIGN

1+2

Objective

To develop skills among students in Computer Aided Designing of products.

Theory

UNIT I

Significance of product design and need for creative approach.

UNIT II

Socio-technical and ergonomic factors in Design of Products: anthropometric, ergonomic, psychological, physiological considerations in design decision making, legal factors, engineering ethics and society.

UNIT III

Design models - Principles in design for manufacturability.

UNIT IV

Design analysis and implementation - Design production systems: modular design, design economics, cost analysis, cost reduction and value analysis techniques

Practical

An analyzing the user's option on the design of a specific a specific consumer product. Collection and reporting of standards for selected consumer product as per safety regulations. Conceptualizing and developing design concept – evolving prototype of the product - Evaluation of the product and documentation

Suggested Readings

Boothroyd G, Dewhurst P & Knight W. 2002. *Product Design for Manufacture and Assembly*. CRC Press.

Frey D. 1998. *AutoCAD 14*. BPB Publ.

Ron H. 2000. *Using Auto CAD 200*. Special Ed. Prentice Hall of India.

Sharma DD. 2000. *Total Quality Management*. Sultan Chand & Sons.

FRM 606 ENVIRONMENTAL ISSUES AND CHALLENGES 3+0

Objective

To expose students to global environmental issues and strategies to maintain ecological balance in micro and macro environment.

Theory

UNIT I

Introduction to technology and environment. State of India's environment.

UNIT II

Sustainable development- An International perspective. Global environmental issues. Carbon credit and its impact on growth of industries.

UNIT III

Environmental education. Environmental Management System. Population and Community Ecology. Natural Resource Conservation and Management.

UNIT IV

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.

Suggested Readings

Baland JM, Bardhan P & Bowles S. 2007. *Inequality, Cooperation and Environmental Sustainability*. Pauls Press.

Choudhary BL. 2007. *Environment Management Practices: An Indian outlook*. Himanshu Publ.

Deswal S & Deswal A. 2002. *Energy, Ecology, Environment and Society*. Dhanpat Rai & Co.

Joseph K & Nagendran R. 2004. *Essentials of Environment Studies*. Pearson Edu.

Kumar A & Preeti. 2008. *Environment: New Challenges*. Daya Publ.

Singh K & Sisodia A. 2007. *Environmental Economics: Theory and Applications*. Sage Publ.

Venugopal Rao P. 2002. *Text Book of Environmental Engineering*. Prentice Hall.

Objective

To develop skills in students to address needs of people with special needs.

TheoryUNIT I

Characteristics and status of people with special needs and mentally challenged children and elderly.

UNIT II

Theoretical perspectives on efficiency, comfort and safety: Physical environment: Architectural dimensions- flooring, stairs, storage, workstations, furniture, fixtures and fitments, equipment.

UNIT III

Indoor Environment- Light, noise, humidity and temperature.

UNIT IV

Managerial Dimensions- Time, money, energy, food and health, 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 centers catering to people with special needs and presenting report.

Suggested Readings

Bridger RS. 1994. *Introduction to Ergonomics*. McGraw Hill.

Dalela S & Saurabh. 1999. *Textbook of Work Study and Ergonomics*. Standard Publ.

Grandjean E. 1978. *Ergonomics of the Home*. Taylor & Francis.

Ian G. 2006. *Applied Ergonomics Handbook*. Butterworths.

Panero J Zelnik. 1979. *Human Dimensions and Interior Space*. The Architectural Press.

Singh S. 2007. *Ergonomics Interventions for Health and Productivity*. Himanshu Publ.

FAMILY RESOURCE MANAGEMENT

List of Journals

- **Family Ecology**, CCS HAU, Hisar, Haryana, India.
- **Journal of Family Studies and Consumer Economics**, U.K.
- **Indian Journal of Home Science**, Baroda, India.
- **Applied Ergonomics**, U.K.
- **Ergonomics**, Taylor & Francis Group, London.
- **Journal of Dairying, Food and Home Science**, Karnal, India
- **Human Ecology**, KRE publishers, New Delhi
- **Journal of Home Economics**, American Home Economics Association, USA.

e-Resources

- <http://www.cgsindia.org>
- <http://www.ergowebergonomicsconcepts.com>
- <http://www.virginiatech.org>
- <http://www.ergo.human.cornel.edu/studentdourloads/DEA325pdfs/anthrodesign.pdf>
- <http://www.te/tips/for/improving/posture/and/ergonomics/html>
- <http://www.ergoweb.com/news/detail.cfm>
- <http://www.healthy.net/asp/templates/articles/asp>
- <http://www.hourthelps.html>
- <http://www.advancechiro.on.ca/posturenf/htm>
- <http://www.postureatuork.htm>
- <http://www.handbag.com/healthfit/keeping/posturalinbalances>
- <http://www.hse.gov.uk/humanfactors/-37k>
- <http://www.deskline.linak.com/applications/?id2=179-11K>
- <http://www.nceas.ucsb.edu/crmp-34K>
- <http://www.sciencemag.org/cgi/content/abstract/209/4452/183>
- <http://www.goes.ed.ac.uk/-20K>
- http://www.emmanual.edu/GPP-Programs/Master_of_science_in_human_resource_management.html
- <http://www.aofes.org>
- <http://www.neeri.res.in>
- <http://www.inst.org/1d>
- <http://www.bis.org.in>
- http://www.design.guide.for_you.com
- <http://www.decoration.dekorasyonu.com>
- <http://www.interior-world.in>
- http://www.interior_decorating_infosource.com
- <http://www.designingonline.com>
- <http://www.design.careeredu.com>
- <http://www.sereneinteriors.com>
- http://www.homefurnish.com/hmdeco_m/htm
- <http://www.interiordesignschoolreview.com>
- <http://www.interiordec.about.com/od/careerinfo>
- <http://www.wn.wikipedia.org/wiki/consumerism>
- http://www.cbc.ca/consumers/market/murmurs/archives/category_cars.html
- <http://www.globalisoues.org/traderelated/consumption/rise.asp>

- <http://www.ethicalconsumer.org/philosophy/riserise.htm>
- http://www.intertek-labtest.com/industry/toys_juvenile/toys_testing/?lang=en
- http://www.cygnacom.com/sel_overview.pdf
- <http://www.tse.com/services/prodtest.html>
- <http://www.catra.org/pages/services/testprodual.htm>
- <http://www.livkinghub.elsewer.com/retrieve/pii/0007850007614814>
- <http://www.stickymids.com/testndevalnation.asp>
- <http://www.ingentaconnect.com/content/mcb/110/2007/0000025/0000005/art0002>
- http://www.wbdg.org/design/minimize_consumption.php
- http://www.architectureweek.com/2000/0906/building_1-1.html
- <http://www.iea.org/docs/index.htm>
- <http://www.archi.hkn.hk/research/BEER/sustain.htm>
- <http://www.arabschool.org.suj/ASSTbook/energy%20conservation%20in%20building.doc>
- <http://www.eric.ed.gov/icricwebportal/recora/retail?accno-ed140508>
- <http://www.scientific.net/0-87849-860-2/331/>
- http://www.epa.gov/oms/speches/mto_9508.htm
- http://www.indicare.org/tiki_read_article.php
- <http://www.docuticker.com/?cat=60>
- <http://www.acue.org/energy/multiple.htm>
- http://www.mbhilpahua.com/tag/consumer_issues/
- <http://www.northlan.gov.uk/livingthere/consumer+issues/index.html>
- <http://www.ces.nesu.edu/depts/tes/pub/forum.html>
- http://www.euractiv.com/en/pa/consumer_communications_popular_eu/article_172461
- <http://www.oliverwyman.com/ow/cmt.htm>
- <http://www.ieeeexplore.ieee.org/iel15/9640/3.469/01405144.pdf>
- <http://www.eds.com/industries/communications>
- http://www.artmam.net/consumer_relations.htm

Suggested Broad Topics for Master's and Doctoral Research

- Development of drudgery reducing technologies in home, farm and dairy sectors
- Testing of drudgery reducing technologies
- Environment protection through resource management
- Management of family resources
- Energy conservation and renewable energy sources
- Entrepreneurial development among women
- Consumerism and consumer economics
- Occupational health hazards and safety
- Rural hygiene and sanitation
- Accessible buildings for residential and commercial uses
- Ergo-friendly product design, testing and evaluation
- Building design for special needs

HUMAN DEVELOPMENT AND FAMILY STUDIES
Course Structure - at a Glance

CODE	COURSE TITLE	CREDITS
HDFS 501*	THEORIES OF HUMAN DEVELOPMENT & BEHAVIOUR	3+0
HDFS 502*	ADVANCES IN LIFE SPAN DEVELOPMENT	2+1
HDFS 503*	GENDER ISSUES IN HUMAN DEVELOPMENT AND FAMILY RELATIONS	2+1
HDFS 504*	CHILDREN WITH DEVELOPMENTAL CHALLENGES	2+1
HDFS 505	INNOVATIVE PROGRAMMES IN EARLY CHILDHOOD CARE AND EDUCATION	2+1
HDFS 506	METHODS AND TECHNIQUES OF ASSESSMENT IN HUMAN DEVELOPMENT	2+1
HDFS 507	GUIDANCE AND COUNSELING	1+2
HDFS 508	GERONTOLOGY	2+1
HDFS 509	ADOLESCENT DEVELOPMENT AND CHALLENGES	2+1
HDFS 510	PARENT AND COMMUNITY EDUCATION	1+2
HDFS 511	APPRAISAL OF CHILD AND FAMILY WELFARE INSTITUTIONS	1+1
HDFS 512	DEVELOPMENT OF LEARNING MATERIAL AND CHILDREN'S LITERATURE	1+2
HDFS 513	FAMILY THERAPY	2+1
HDFS 591	MASTER'S SEMINAR	1+0
HDFS 599	MASTER'S RESEARCH	20
HDFS 601**	ADULTHOOD DYNAMICS	2+1
HDFS 602**	ADVANCES IN FAMILY STUDIES	2+1
HDFS 603**	PROGRAMME DEVELOPMENT FOR VULNERABLE FAMILIES	2+1
HDFS 604	PRINCIPLES AND STRATEGIES IN DEVELOPMENTAL INTERVENTION	2+1
HDFS 605	WOMEN STUDIES	1+1
HDFS 606	TRENDS AND ISSUES IN HUMAN DEVELOPMENT	3+0
HDFS 607	QUALITATIVE RESEARCH METHODS	2+1
HDFS 608	ECOLOGY AND HUMAN DEVELOPMENT	3+0
HDFS 609	CROSS-CULTURAL PERSPECTIVES IN FAMILY STUDIES	2+0
HDFS 691	DOCTORAL SEMINAR I	1+0
HDFS 692	DOCTORAL SEMINAR II	1+0
HDFS 699	DOCTORAL RESEARCH	45

* Compulsory for Master's programme; ** Compulsory for Doctoral programme

HDFS 501 THEORIES OF HUMAN DEVELOPMENT AND BEHAVIOUR 3+0

Objective

To equip the students with the concepts and theoretical frame work of different theories of Human Development and appraise them with a comparative analysis of theories and their educational implications

Theory

UNIT I

Meaning, types and functions of theory, theoretical perspectives- biological, environmental, interactional, cultural context, concepts and implications of psychoanalytic theory of Sigmund Freud and Neo-Freudians.

UNIT II

Psychosocial theory of Erikson, Field theory of Kurt Lewin, Stimulus – Response theory and Social learning theories, Cognitive theory of Jean Piaget.

UNIT III

Moral development theory of Kohlberg, Attachment theory of Bowlby, Language theory of Chomsky, Need theory of Abraham Maslow, Ecological theory of Bronfrenbrenner.

UNIT IV

Cultural historical theory of development of Vygotsky, Self Theories - Comparative analysis of theories and their application, Integrated approach to theory building.

Suggested Readings

- Baldwin AL. 1980. *Theories of Child development*. John Wiley.
Craig. 1985. *Human Development, Theories of Human Development*. 2nd Ed. John Wiley & Sons.
Grain WC. 1980. *Theories of Development: Concepts and Application*. Englewood Cliffs.
Hall CS. 1998. *Theories of Personality*. 4th Ed. John Wiley.
Sailkind NJ. 2004. *An Introduction to Theories of Human Development*. Sage Publ.

HDFS 502 ADVANCES IN LIFE SPAN DEVELOPMENT 2+1

Objective

To impart knowledge to students regarding current trends, issues of development and comparative analysis of theories and their educational implications.

Theory

UNIT I

Life span development; Physical development, psycho-motor development; role of heredity and environment, recent trends in assessing pre-natal and neo-natal status.

UNIT II

Genetic research and its influence on child's development, current trends in physical, motor, intellectual, socio-emotional, moral development of children from birth to adolescence, socialization practices and influencing factors and impact of social-emotional deprivation on different stages of development.

UNIT III

Culture and its impact. Emotional maturity, stability and catharsis. Personality changes in self perceptions and gender role development through different developmental stages, influence of cultural factors.

UNIT IV

Integrated view of development from a life span perspective- recent research trends in human development issues.

Practical

Study of physical, motor, social, emotional, intellectual, language, moral and personality development at different ages, using standard measurement tools/instruments, writing interpretative reports for parents, teachers and referral services.

Suggested Readings

Dattan N Resse. HW. (Eds.). 1974. *Life Span Developmental Psychology*. Academic Press.

Kail RV & Cavanaugh JC. 2004. *Human Development – A Life Span View*. Thompson Learning.

Santrock JW. 2006. *Life Span Development*. Mc Graw Hill.

HDFS 503

GENDER ISSUES IN HUMAN DEVELOPMENT AND FAMILY RELATIONS 2+1

Objective

To orient the students regarding the gender issues in human development and family relationships to impart experiences regarding gender issues, family practices and biases prevalent in Indian Society.

Theory

UNIT I

Concept of gender- its 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.

UNIT II

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.

UNIT III

Working towards family solidarity and social well being (values and ethics in the promotion of happy family life).

UNIT IV

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. Case study of three generation families to identify the differences in the gender orientation roles and responsibilities. Case studies for gender role performance.

Suggested Readings

- Channa K. 1988. *Perspective in Indian Development: Socialization, Education and Women: Exploration in Gender Identity*. Orient Longman.
- Coltrance S. 1997. *Gender and Families*. Fine Forge Press.
- Gherardi S. 1995. *Gender Symbolism and Organizational Structures*. Sage Publ.
- Narsimhan S. 1999. *Empowering Women An Alternative Strategy for Rural India*. Sage Publ.

HDFS 504 CHILDREN WITH DEVELOPMENTAL CHALLENGES 2+1

Objective

To orient the students to the etiology and developmental characters of children with developmental challenges and develop in them the sensitivity for working with developmentally challenged children.

Theory

UNIT I

Classification of developmentally challenged children, current statistics, its implications on the quality of life. Multi disciplinary view of children with special needs.

UNIT II

Remedial programmes for different types of special needs- mental deficiency, sensory disabilities, neurological disorders, physically challenged.

UNIT III

Special programmes for the gifted. Characteristics, assessment, educational and vocational interventions.

UNIT IV

Policies, Government provisions, Concessions, Facilities and Legislations for challenged children.

Practical

Study of etiology, characteristics, diagnosis of children with different disabilities, conducting individual home based intervention by collaborating with other professionals and also with institutions for center-based intervention- schools, clinics, also with pediatric wards, special schools. Collaborative work with professionals in development of intervention packages for children with special needs.

Suggested Readings

- Cruickshank WH & Johnson GU. 1970. *Education of Exceptional Children*. Prentice Hall.
- Kar C. 1996. *Exceptional Children - Their Psychology and Education*. Sterling Publ.
- Kirk SA. 1970. *Educating Exceptional Children*. Oxford & IBH.

HDFS 505 INNOVATIVE PROGRAMMES IN EARLY CHILDHOOD CARE AND EDUCATION 2+1

Objective

To orient the students towards the need and scope of innovative programmes in ECCE and develop ability to plan and execute innovative

ECCE programme for intellectual, social, emotional and motor growth of young children.

Theory

UNIT I

Need and scope for innovative programmes in early childhood. Innovative programmes for child care and education development.

UNIT II

Support services networking. Innovative programmes for intellectual and motor development.

UNIT III

Support services for communication, social and emotional development of young children.

UNIT IV

Programmes for foundations for life long learning. Preventing and arresting developmental delays / disabilities.

Practical

Planning, execution and evaluation of innovative programmes for intellectual, social, emotional and motor growth of young children.

Suggested Readings

Christine M. 2004. *Movement and Learning in the Early Years*. Sage Publ.

Kaul V.1997. *Early Childhood Education Programme*. NCERT.

Mishra RC. 2005. *Early Childhood Care and Education*. A.P.H. Publ.

Murlidharan R. 1991. *Guide to Nursery School Teacher*. NCERT.

Saraswathi TS. 1988. *Issues in Child Development- Curriculum and Other Training and Employment*. Spmaiya.

Swaminathan M. (Ed.). 1988. *The First Five Years: A Critical Perspective on Early Childhood Care and Education in India*. Sage Publ.

HDFS 506

METHODS AND TECHNIQUES OF ASSESSMENT IN 2+1 HUMAN DEVELOPMENT

Objective

To appraise the students with different methods and techniques of assessment in human development and expose them to use different assessment techniques throughout life span.

Theory

UNIT I

Assessment –definition, function, concept of measurement, techniques & their relative efficacy in measuring different aspect of human development.

UNIT II

Trends & challenges in assessment of human behavior, ethical issue in the assessment of human development.

UNIT III

Scientific methods & their criteria -reliability, validity control, item analysis, assessment methods. Use of objective measures & methods.

UNIT IV

Development of test /scale & standardization procedure types of scales – nominal ordinal, interval & ratio scale

Practical

Screening & diagnostic assessment for various development through different tools & techniques, physical – anthropometric measurement,

psychomotor and mental development (Bayley's scale etc.), Cognitive & language -Wechsler's scale of intelligence. Achievement interest & Aptitude scale, Personality & behavior - Emotional maturity and temperament, parent child relations, child -rearing practices, parenting styles achievement and aptitude. Interpretation of assessment and report to parent and teachers.

Suggested Readings

- Gulati R & Gugnani A.1994 *Child Development - A practical Manual*. Phoenix Publ.
 Kothari CR.1999, *Research Methodology - Methods and Techniques*. Wishwa Prakashan.
 Sharma RA. 1999. *Essentials of Measurement in Education and Psychology*. Raj Printers.
 Sidhu.KS.1999. *Methodology of Research in Education*. Sterling Publ.

HDFS 507 GUIDANCE AND COUNSELING 1+2

Objective

To acquaint the students about the concept and needs of guidance and counseling, qualities of guidance worker and counselor and different techniques of guidance and counseling.

Theory

UNIT I

Introduction to guidance and counseling, concept, aims, need, nature and scope of guidance and counseling -Basic principles of guidance and counseling.

UNIT II

Types of guidance and counseling services - educational, vocational, personal, marriage and family, leisure time. Research trends in guidance and counseling in India and abroad.

UNIT III

Competencies and role of a guidance and counseling professionals. Modes and methods of counselling. Essential of conducting guidance and counselling session. Understanding the process of guidance and counseling.

UNIT IV

Knowledge and skills to handle assessment tools. Effective communication and documentation skills. Networking with allied professionals and institutions.

Practical

Compile research reviews on various aspect of guidance and counseling. Prepare a observation checklist to analyze guidance and counseling centers -organizational structure, Objective, types of services provided, facilities available etc. Competencies of the personnel, feed back of the clients towards the services, financial management /budget, support of other professionals /agencies to centre etc. Successful case studies of the centre. Simulation exercises of guidance and counseling children and parents. Reports of films/ Video shows related to the course

Suggested Readings

- Alam S. 2008. *Basics of Guidance & Counselling*. Global Vision.
 Barki BC & Mukhopadhaya B. 1989. *Guidance and Counseling, A Manual*. Sterling.

- Cooper S. 2005. *Counselling, Inception, Implementation & Evaluation*. Infinity Books.
- Dryden W. 1987. *Counseling Individual- the Rational Emptive Approach*. Taylor & Francis.
- Gunner J. 1984. *Counseling and Therapy for Children*. The Free Press.
- Ivey AE, Ivey MB & Downing LS. 1987. *Counseling and Psychotherapy - Interpreting, Skills Theory and Practice* . Prentice Hall.
- Kenedy E.1977. *On Becoming a Counselor. A Basic Guide for Non-professional Counselor*. Gill and Macillan.
- Skinner C. 2006. *Educational Psychology*. Prentice Hall of India.

HDFS 508 GERONTOLOGY 2+1

Objective

To orient the students regarding the theoretical perspectives and current issues of aging and inculcate in them knowledge regarding the methods and techniques in conducting researches in gerontology.

Theory

UNIT I

Definition - socio demographic profile of the aged in Indian context. Theoretical perspective on aging. Impact of aging on physical, psychological, socio-emotional aspects, abuse.

UNIT II

Aging and health. Aging and financial status. Stress among the aged and coping strategies.

UNIT III

The aged in the family context- problems and prospects, support systems. Contemporary socio-cultural changes and their effects on the aged-international scenario.

UNIT IV

Research trends in gerontology and methodological issues. Welfare of the aged –policies and programmes.

Practical

Review of study methods in gerontology, Identification of focus areas on aging. Developing a tool on selected topics on aging, field testing and appraisal. Visit to institutions for aged and critical evaluation. Project proposal for developmental programmes for aged.

Suggested Readings

- Dandekar K. 1996. *The Elderly in India*. Sage Publ.
- Hayslip B & Panek P. 1989 *Adult Development and Aging*. Harper & Row.
- Richardson B & Barusch A. 2005. *Gerontological Practice for the 21st Century*. Columbia University Press.
- Sheets D, Bradley D & Hendricks J. 2005. *Enduring Questions in Gerontology*. Springer.

HDFS 509 ADOLESCENT DEVELOPMENT AND CHALLENGES 2+1

Objective

To acquaint the students regarding the inherent challenges and contemporary issues in adolescent development.

Theory

UNIT I

Adolescence – definition, importance of the stage. Traditional theories of adolescence, Modern theories, biological development, maturation, environmental learning, interactional and cultural context. Perspectives of adolescent development, interpersonal relationships, socio- cultural attitudes of adolescents.

UNIT II

Consequences of puberty changes, sexual development, early and late maturation and psychological implications.

UNIT III

Intellectual development- formal operations, complexities of adolescent thoughts. Moral development - integration of self and psycho-sexual resolution and resolving identity crisis- reorganization of social life- relationship with peers and parents, heterosexual relationships.

UNIT IV

Vocational preferences, training and work, transition to adulthood- conflicts with special reference to contemporary socio – cultural changes.

Practical

Case studies, interviewing early and late adolescents on issues – problems, pubertal changes, friendships, career, aspirations, self and social awareness, political awareness, mass media preferences. Depiction of adolescents in mass media - content analysis of media- films, television, literature.

Suggested Readings

Berk LE. 1993 *Infants, Children and Adolescents*. Allyn & Bacon.

Sebald H. 1984. *Adolescence - A Social Psychological Analysis*. Prentice Hall.

Seifert KL & Hoffnung RJ. 1991. *Child and Adolescent Development*. Houghton Mifflin.

HDFS 510

PARENT AND COMMUNITY EDUCATION

1+2

Objective

To acquaint the students with the significance and approaches of parent education and develop skills in using various techniques of parent education.

Theory

UNIT I

Concept and history of parent education; with special reference to India; Objective and theoretical approaches to parent education programmes.

UNIT II

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; teachers as a parent educator.

UNIT III

Communication techniques; written media/ printed matter and visual media. Increasing competency of a parent educator; knowledge of the subject matter, training of personnel. Special projects – open house parent training centres; parent involvement in community programmes.

UNIT IV

Special target groups for parent education; parents of young children, economically and socially backward, adopted, divorced, single and other needy parents living in urban, slum and rural areas, developmental problems and disability during childhood and adolescence.

Practical

Conducting parent teacher meetings in urban, rural, slum areas and schools; assessing knowledge of youth and parents regarding various aspects of family and community life and starting short- term action oriented / rehabilitative programmes using various techniques of parent education; preparing educational material for community participation.

Suggested Readings

- Brim H, Orville G & Brjm Jr.1980. *Learning to Parents, Principles, Programmes and Methods*. Sage Publ.
- Fine MJ. (Ed.). 1980. *Handbook on Parent Education*. Academic Press.
- Kulkarni S. 1980. *Parent Education Perspectives and Approaches*. Rawat Publ.
- Ramiya K. 1977. *Minimum Content of Parent Education. A Survey of Expert's Opinion*. Tata Insinuate of Social Sciences, Bombay.

HDFS 511

APPRAISAL OF CHILD AND FAMILY WELFARE 1+1 INSTITUTIONS

Objective

To orient the students regarding various child and family welfare institutions and programmes and enable them to understand and develop skills of planning, implementing and evaluating welfare programmes / institutions.

Theory

UNIT I

Concept of monitoring and evaluation- need appraisal – orientation to the supportive and substitutive services related to the welfare and families. Type of evaluation techniques for different types of institutions for children. Impact analysis- type and methods of monitoring. Enhancing functional quality of institutions and evaluation.

UNIT II

Family welfare – concept, scope and need, historical perspectives. Roles and responsibilities of family and community. Constitutional provisions- act, amendments related to family. Laws and policies governing mainstreaming of vulnerable children (i.e. street children, child laborers) and families (adoptive families, reorganized families).

UNIT III

Orientation to welfare institutions and programmes, developmental programmes related to health, nutrition, and education. Provision of basic resources- family care and counseling, agencies.

UNIT IV

Organizations and programmes for family welfare- local, national and international- aims, Objective and services.

Practical

Visits to study child welfare institutions and evaluation of strategies for enhancing managerial skills of personnel and generation of resources,

implementing developed plan of action and its evaluation, report writing. Observational visits and evaluation of family welfare institutions and organizations. Proposals for developing welfare project for health, nutrition, education and rehabilitation of the disabled families. Implementation strategies of project, to test its efficacy. Monitoring and evaluation of services for family welfare. Criteria and impact assessment.

Suggested Readings

- Kumar R. 1998. *Child development in India- Health Welfare and Management*. Ashish Publ. House.
- Singh D. 1995. *Child Development: Issues, Policies and Programmes*. Kanishka Publ.
- Sood M, Swaroop N & Batra A. 1992. *Voluntary Organizations Working for Children and Women: Some Profiles*. NIPCCD.

HDFS 512

DEVELOPMENT OF LEARNING MATERIAL AND 1+2 CHILDREN'S LITERATURE

Objective

To develop the skills of preparing learning material and literature for children of various age groups.

Theory

UNIT I

Significance of teaching materials for early childhood education programs. Principles of developing materials for children. Concept, importance and characteristics of creativity, promoting creative environments.

UNIT II

Planning and developing learning material for – physical, motor, social, language, creativity, mental and personality development. Care and maintenance of materials.

UNIT III

Literature for Children: Need and scope of children's literature, Children's literature through the ages. Contributors to children's literature. Characteristic features of literature for children: sources, features and significance of folk tales, folk songs, folk arts, mythology, historical events, science concept, biographies, fantasy and fairy tales.

UNIT IV

Types and importance of poetry, picture book, short stories and fables in educational programmes. Role of puzzles, cartoons, comics, comic strips, skits, role plays, dance in educating children. Creating literary environment in school. Role of children's library.

Practical

Visit to play centers, toy manufacturing units, shops, fairs etc. and observing practical utility of different toys and teaching materials. Preparation of teaching materials for different developmental domains. Field testing and critical analysis of developed materials. Survey of existing children's literature, observational visit to book exhibition, book fair, libraries and mobile vans. Group discussion on elements of writing for children-poem, stories, puppet shows, cartoon strips, picture books. Developing items of literature for different domains using pictures, audio-video materials and computer aided designs.

Suggested Readings

- Brahma D. 1989 *Children's literature and education in India*. Deep & Deep Publ.
- Green MM & Woods EL. 1969 *A Nursery School Handbook for Parents Teachers*. Universal Book Stall.
- Marshall MR. 1982 *An Introduction to the World of Children's Books*. Grower Publ.
- Rudolph M & Cohen DH. 1977 *Kindergarten and Early Schooling*. Prentice Hall.
- Seefeldt C. 1980 *Teaching Young Children*. Prentice Hall.

HDFS 513 FAMILY THERAPY 2+1

Objective

To orient the students regarding various methods and techniques of family therapy.

Theory

UNIT I

Theoretical developments in marital and family therapy; Schools for family therapy, structured, strategic, experimental family and integrated family therapy.

UNIT II

Social learning approach: Cotemporary marital therapies, psychoanalytic, behavioural, system theory approaches; areas and scope of marriage and family therapy.

UNIT III

Psychosomatic symptoms, psychiatric disorders, marital distress, alcoholism, drug dependence, juvenile offences, problems of adolescence, conduct problems, work and school phobias.

UNIT IV

Qualities of marriage and family therapist. Advanced techniques of marriage and family therapy; future direction 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 of different areas of marriage and family therapy. Case studies of different methods and techniques of marriage and family therapy.

Suggested Readings

- Mark R. 2003. *Family Therapy in Focus*. Sage Publ.
- Roger L. 2004. *Family Therapy - A Constructive Framework*. Sage Publ.

HDFS 601 ADULTHOOD DYNAMICS 2+1

Objective

To acquaint the student to developmental perspectives in relation to adult life stages, theoretical perspectives of the aging process and give the theoretical and practical experiences about changes and adjustments at various stages of adulthood aging.

Theory

UNIT I

Adulthood: Theoretical perspectives in adult development, transition to adulthood, stages of adulthood.

UNIT II

Issues and adjustment related to occupation, self and family, supportive services.

UNIT III

Theoretical perspectives on developmental changes, biological health cognitive, changes and adjustment.

UNIT IV

Death, dying and bereavement, attitude towards death, grief and bereavement.

Practical

Case studies on roles and family relations, changes during adulthood, menopausal changes. Development of case studies on adults with special focus on different ecological settings, intergenerational perspectives. Visit to recreational centers, health clubs and other institutes working for adults. Critical evaluation of portrayal of adulthood in media. Film shows / panel discussion / appraisal of community on issues and policies related to adulthood. Presentation of reports on case studies.

Suggested Readings

Dandekar K. 1996. *The Elderly in India*. Sage Publ.

Hayslip B & Panek P. 1989 *Adult Development and Aging*. Harper & Row.

Leme BH. 1995. *Development in Adulthood*. Allyn & Bacon.

HDFS 602

ADVANCES IN FAMILY STUDIES

2+1

Objective

To develop an understanding in students regarding various approaches and frameworks for understanding the family and expose them to the current issues in Indian families and orient them regarding methods and techniques of family therapy.

Theory

UNIT I

Definition and changing patterns of Indian family, different approaches to family studies: Nature and importance of conceptual framework, Institutional framework, Structural functional framework, Developmental framework, Interactional framework.

UNIT II

Sociological viewpoint of family by Persons. Research methodology-inter disciplinary approaches to family measurement. Psychological approaches to assessment in family. The Psychiatric approach, Interactive approach-measurement of marital roles and relationship, Ethnographic approach, Demographic approach.

UNIT III

Ethics in family research, Current issues for research in Indian family, Fatherhood: Concept. Changing role of parents in parenting, Disorganized and reorganized families, marital distress, psychiatric disorder and family

therapy. Alternate family patterns -single parent families, female headed households, dual career families, sibling families etc. Adoptive families. National policies and programmes for family welfare.

UNIT IV

Theoretical developments in marital and family therapy, schools for family therapy, structured, strategic, experimental family and integrated family therapy.

Practical

1. Appraisal of tools in family area (at least ten tools). Critical evaluation of family welfare programmes towards family welfare. Developing research proposal on current issues relating to family. Survey of family patterns in rural, slum and urban areas.
2. Case studies of different areas of marriage and family therapy using different methods and techniques.

Suggested Readings

Bharat S. 1996. *Family Measurement in India*. Sage Publ.

Roger L. 2004. *Family Therapy - A Constructive Framework*. Sage Publ.

White JM & Klein DM. 2007. *Family Theories*. Sage Publ.

HDFS 603 PROGRAMME DEVELOPMENT FOR VULNERABLE 2+1 FAMILIES

Objective

To learn to identify vulnerable population in rural and urban areas and develop an understanding regarding techniques of planning, implementing and evaluating development and research projects.

Theory

UNIT I

Concept of developmental programmes, types of projects - Development and Research Projects – polycentric and cyclical approaches to scientific research and development. Holistic and inter disciplinary approach to research project management.

UNIT II

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.

UNIT III

Developing Programmes- project proposal - steps/ process involved, principles of project design, , aspects of appraisal, basic considerations- risks and returns.

UNIT IV

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. Develop programmes for their 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. Implementing / stimulating management techniques- Programme Evaluation and Review Technique (PERT), Critical Path Method (CPM), Line of Balance (LOB), and Gantt Chart, SWOT analysis. Dissemination / publishing of success stories, popular article.

Suggested Readings

Chandra P. 1995. *Projects-Planning, Analysis, Selection, Implementation and Review*. Tata McGraw.

Choudhary DP. 1992. *Women Welfare and Development*. NIPCCD.

Singh PN. 1994. *Training for Management Development*. Suchandra Publ. & Indian Society for Training and Development.

HDFS 604 PRINCIPLES AND STRATEGIES IN DEVELOPMENTAL INTERVENTION 2+1

Objective

To make the students aware about significance and strategies of imparting intervention.

Theory

UNIT I

Intervention – definition and current orientation towards intervention-vulnerable groups for intervention and their characteristics.

UNIT II

Need assessment for intervention-contemporary issues and current trends in intervention-multi disciplinary approach to intervention, intervention strategies, approaches and methods.

UNIT III

Developing network with agencies- generating resources. Role of family and community in implementation of intervention programmes.

UNIT IV

Evaluation of intervention programmes.

Practical

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

Suggested Readings

Berk LE. 1996. *Child Development*. Prentice Hall.

Choudhary DP. 1992. *Women Welfare and Development*. NIPCCD.

Hetherington EM & Parke RD. 1993. *Child Psychology: A Contemporary View Point*. Mc Graw Hill.

Saraswathi TS & Kaur P. 1999. *Human development and Family Studies in India*, Sage Publ.

HDFS 605 WOMEN'S STUDIES**1+1****Objective**

To impart knowledge regarding scope and perspectives to women studies in cultural context and acquaint them to various important issues regarding women's studies and development.

TheoryUNIT I

Meaning and scope of women studies. Women's perspective and its constituent elements in present socio-economic and cultural context. Women's movement in pre-independent and post independent periods and present trends. Milestones and obstacles in women's movement in India.

UNIT II

Feminism, its basic types and their relevance to Indian context Facts and myths of feminism. Importance of women's participation in economics, educational, social and political development. Gender role and sex role stereotypes. Changes in educational, economic, social and familial status of women.

UNIT III

Population statistics and sex ratio. Working women and challenges. Problems of women workers in un-organized sector. Gender violence-dowry harassment and deaths, suicides, commercial and religious prostitution, sexual harassment and exploitation, family violence, amniocentesis, foeticide, infanticide, eve teasing.

UNIT IV

Laws and women-family courts, parivarik mahila lok adalat, a critique of laws for women. Women and mass media-women's health and family planning and health indicators. Child marriage. National Women's Commission and State Commissions for women and their role in women studies and policy issues.

Practical

Observational visits to women's organizations. Planning and organising awareness campaigns on vital women's issues. Portrayal of women in mass media - news papers, magazines, television, movies. Study of practices in various castes, communities and religions and status of women. Study of attitude towards women's education, employment. Situational analysis of gender equality and equity.

Suggested Readings

Desai N & Krishna M. 1988. *Women and Society in India*. Ajanta Publ.
Krishnaraj M. (Ed.). 1986. *Women Studies in India*. Popular Prakshan.
Patil AK. 1995. *Women and Development*. Ashish Publ.
Poonacha V. 1999. *Understanding Women Studies*. SNTD Women's University. Mumbai.

HDFS 606 TRENDS AND ISSUES IN HUMAN DEVELOPMENT 3+0**Objective**

To impart knowledge to students regarding theoretical foundations, current trends and issues in human development.

Theory

UNIT I

Classical and contemporary theoretical orientation to Human development: regulation of development – Developmental psychology to Developmental Science from deficit to diversity in development.

UNIT II

Consistency of concepts, phenomena and methods of study – foundations of developmental thinking, multilevel nature of developmental processes ; constructing general model for development – developmental behaviour genetics - Cognitive and emotional development – dynamic structure in cognitive and emotional development – growth cycle, brain activity.

UNIT III

dynamics of stability and variability in development – role of experience in development – optimal experience theory – human action perspective to development developmental diversity and regularity- intentional personal development – personal control over development.

UNIT IV

Life span theory in development five levels of analysis – life cause theory basic concepts life transitions and historical change – future directions for life course and behaviour genetics – religious and spiritual development through life span – positive and negative correlates.

Suggested Readings

Berk Laura E. 1989. *Child Development*. Allyn & Bacon.

David Ausubel & Ednaund V Sullivan 1970. *Theory and Problems of Child Development*. Grune & Stratton.

Dolly Singh 1995. *Child Development – Issues, Policies and Programme*. Kanishka Publ.

Handbooks of Child Psychology. 1998 & 2006. Vol. IV. John Wiley & Sons.

Saraswathi TS & Kaur B. 1993. *Human Development and Family Studies in India*. Sage Publ.

HDFS 607

QUALITATIVE RESEARCH METHODS

2+1

Objective

To orient the students regarding the need and scope of qualitative research and impart them knowledge regarding the methods and techniques of qualitative research.

Theory

UNIT I

Need and scope of qualitative research methods. Types and overview of qualitative research methods.

UNIT II

Case studies, naturalistic design, historical methods, content analysis, ethnography, single cases experimental design.

UNIT III

Trends, challenges, limitations and constraints of qualitative research methods.

UNIT IV

Ethical issues in conduct of research.

Practical

Critiquing research papers using qualitative methods. Extensive review of the empirical research work using qualitative method, identifying researchable issues that can be researched for qualitative methods, conducting in-depth interviews, focused group interviews. Analysis of data interpretation and reporting.

Suggested Readings

Barbour R. 2008. *Introducing Qualitative Research*. Sage Publ.
Corbin J & Strauss A. 2008. *Basics of Qualitative Research*. Sage Publ.
Denzin N & Lincon Y. 2008. *Collecting and Interpreting Qualitative Materials*. Sage Publ.

HDFS 608 ECOLOGY OF HUMAN DEVELOPMENT 3+0

Objective

To acquaint students regarding the theories and issues pertaining to ecological impact on human development.

Theory

UNIT I

Ecological theories of human development – Bio ecological model and developmental assessment.

UNIT II

Socio-cultural and sub-cultural differences in child's environment and its effect on child-rearing practices and development. Terrain, climate and demographic and economic factors and their effects on human development.

UNIT III

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.

UNIT IV

Environmental aspects – overcrowding, pollution, socio cultural imbalances impacts on development- time factor's impact on development - contemporary child rearing practices and their implications for human development.

Suggested Readings

Bronfenbrenner U. 1979 *Ecology of Human Development; Experiments by Nature and Design*. Harward Universsity, Cambridge.
Bronfenbrenner U. 1989. Ecological System Theory. In: R. Vasta (Ed.). *Annals of Child Development*. Vol. VI. CT Jai Press, Greenwich.
Gerrig RJ & Zimbardo PG. 2006. *Psychology and Life*. Dorling Kindersley.

HDFS 609 CROSS-CULTURAL PERSPECTIVES IN FAMILY 2+0 **STUDIES**

Objective

To sensitize the students regarding the theories and issues pertaining to cultural difference in family studies.

Theory

UNIT I

Definition of culture-components of cultures, characteristics of culture.

UNIT II

Cultural factors and impact on families; functions, roles and responsibilities, socialization practices, family cohesion, interpersonal communication patterns, conflict resolution, family crisis and adaptations.

UNIT III

Legal provisions – emerging cultural trends. Cross-cultural variations and their impact on families.

UNIT IV

Research trends in cross-cultural family studies, methodological issues.

Suggested Readings

Brislin RW. 1990. *Applied Cross Cultural Psychology*. Sage Publ.

Giles B. 2005. *Social Psychology*. Grange Books Co.

Saraswathi TS. 2003 *Cross-cultural Perspectives in Human Development*.
Sage Publ.

HUMAN DEVELOPMENT AND FAMILY STUDIES

List of Journals

- Asian Journal of Psychology and Education
- Behavioural Scientist
- Child Development
- Disabilities and Impairments
- Early Childhood Education
- Exceptional Children
- Indian Journal of Psychological Researches
- Indian Journal of Psychometric and Educational Research Association
- Indian Psychological review -
- Journal of Human Ecology
- Journal of Indian Education
- Journal of Psychometry
- Journal of Social Sciences
- Journal of the Indian Academy of Applied Psychology
- Marriage and Family
- Navtika Journal of Early Childhood Care and Education
- Praachi Journal of Psycho-cultural Dimensions
- Psycho-Lingua
- Studies of Tribes and Tribals
- The Anthropologist
- The Primary Teacher

e-Resources

- <http://cmsgls.myweb.uga.edu/theories.html>
- <http://www.teach12.com/ttcx/coursedesclong2.aspx?cid=197>
- http://en.wikipedia.org/wiki/Developmental_psychology
- http://en.wikipedia.org/wiki/Child_development
- http://www.businessballs.com/erik_erikson_psychosocial_theory.htm
- http://www.associatedcontent.com/article/78543/theories_of_human_development_freudian.html?cat=47
- <http://www.jsu.edu/library/pdfs/handouts/lifespanddevelopment.pdf>
- http://findarticles.com/p/articles/mi_m2248/is_145_37/ai_86056781
- http://www.coursework.info/AS_and_A_Level/Psychology/Developmental_Psychology/Theories_of_Human_Development_-_Stages_o_L15051.html
- <http://www.massey.ac.nz/~alock/virtual/trishvyg.htm>
- [http://www.travelsmart.vic.gov.au/doi/doielect.nsf/2a6bd98dee287482ca256915001cff0c/eac8a984b717095bca256d100017ba50/\\$FILE/Theories%20and%20models%20of%20behaviour%20change.pdf](http://www.travelsmart.vic.gov.au/doi/doielect.nsf/2a6bd98dee287482ca256915001cff0c/eac8a984b717095bca256d100017ba50/$FILE/Theories%20and%20models%20of%20behaviour%20change.pdf)
- <http://www.informaworld.com/smpp/content~content=a785832627~db=all>
- <http://www.amazon.com/Life-Span-Development-Behavior-Paul-Baltes/dp/0124318037>
- <http://gerontologist.gerontologyjournals.org/cgi/content/citation/47/3/404>

- <http://www.developmentalpsychologyarena.com/books/Theoretical-Approaches-to-Lifespan-Development-isbn9780805894707>
- <http://www.lavoisier.fr/notice/frNOOX6S3XXRD3AO.html>
- <http://nobelprize.org/nobel.foundation/symposia/medicine/ns89/index.html>
- http://www.intute.ac.uk/fe/casestudies/care/life_span/life_span.ppt
- <http://www.lclark.edu/dept/cpsy/objects/GF07506Mortola.pdf>
- http://books.google.com/books?id=EBWgBAkEqnIC&pg=PA319&lpg=PA319&dq=advances+in+life+span+development+&source=web&ots=8sNr-oJuE5&sig=DcHwgAf4X8ILY4k6kNt4uh4lJKs&hl=en&sa=X&oi=book_result&resnum=10&ct=result
- <http://www.tpub.com/fcv2/11.htm>
- http://www.tpub.com/content/fc/14099/css/14099_26.htm
- <http://www.glc.k12.ga.us/pandp/guidance/ind-guid.htm>
- http://eric.ed.gov/ERICWebPortal/custom/portlets/recordDetails/detailmini.jsp?_nfpb=true&_ERICExtSearch_SearchValue_0=ED281900&ERICExtSearch_SearchType_0=no&accno=ED281900
- <http://www.answers.com/topic/guidance-and-counseling>
- http://www.uwf.edu/cutla/ALP/Guidance-Counseling_EdS_ALP.pdf
- <http://www.morainepark.edu/pages/920.asp>
- <http://www.slvhs.slv.k12.ca.us/curriculum/mission.htm>
- <http://www.clayton.k12.ga.us/departments/counseling/collprepchklist.asp>
- <http://americanheart.mediaroom.com/index.php?s=43&item=400>
- <http://www.informaworld.com/smpp/content~content=a782893291~db=all~tab=content~order=pubdate>
- <http://jpepsy.oxfordjournals.org/cgi/content/abstract/11/3/343>
- <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=492742>
- <http://psycnet.apa.org/index.cfm?fa=main.doiLanding&uid=1974-04857-001>
- <http://www.jstor.org/pss/1127535>
- <http://www.le.ac.uk/psychology/amc/lepsdeve.html>
- <http://unesdoc.unesco.org/images/0014/001472/147240e.pdf>
- <http://unesdoc.unesco.org/images/0014/001471/147175e.pdf>
- www.iadb.org/biz/ppt/0706thompson.pdf
- <http://ssamanipur.nic.in/InnovativeActivities.htm>
- www.unescobkk.org/fileadmin/user_upload/aims/7th_TWG_Meeting/2007_GMR_outline.pdf
- <http://education.nic.in/cd50years/g/T/HB/0THB0901.htm>
- http://www.worldforumfoundation.org/wf/global_leaders/ppt/presentation_india_3.ppt
- file:///C:/Documents%20and%20Settings/BCD/Local%20Settings/Temporary%20Internet%20Files/Content.IE5/CKT3NZ5E/ecce_training_day_1%5B1%5D.pps#257,2>Welcome
- www.bsppssa.org/components.htm-40k
- <http://depts.washington.edu/lend/coresem/socialwork/5a.htm>
- <http://www.otal.umd.edu/hci-rm/dvlpmeth.html>
- honolulu.hawaii.edu/intranet/committees/FacDevCom/guidebk/teachtip/teachtip.htm
- http://www.eoearth.org/article/Tools_and_methods_for_integrated_analysis_and_assessment_of_sustainable_development

- www.lumsa.it/Lumsa/Portals/File/En06-07/post/Valut06-07En.pdf
- www.umass.edu/oapa/oapa/publications/online_handbooks/course_based.pdf
- www.eng.cam.ac.uk/papers/include2003/assessment.htm
- <http://www.lu p://rehab>
- http://en.wikipedia.org/wiki/Abnormal_psychology
- <http://www.purgatory.net/merits/index.htm>
- www.unex.berkeley.edu/cat/course55.html - 8k
- <http://www.psypress.com/pip/resources/slp/chapter.asp?chapter=ch22>
- <http://www.encyclopedia.com/doc/1O87-abnormalpsychology.html>
- <http://bc.barnard.columbia.edu/~erafaeli/abnormal-syllabus.pdf>
- <http://psychology.about.com/od/glossaryfromatoz/g/abnormalpsyc.htm>
- <http://www.yourdictionary.com/abnormal-psychology>
- en.wikipedia.org/wiki/Gerontology - 53k
- <http://content.karger.com/ProdukteDB/produkte.asp?Aktion=JournalHome&ProduktNr=224091>
- <http://www.geron.org/>
- <http://hss.fullerton.edu/gerontology/>
- <http://www.careersinaging.com/careersinaging/what.html>
- <http://www.careersinaging.com/careersinaging/what.html>
- <http://content.karger.com/ProdukteDB/produkte.asp?Aktion=JournalGuidelines&ProduktNr=224091>
- <http://www.etr.org/recapp/theories/AdolescentDevelopment/index.htm>
- <http://social.jrank.org/pages/16/Adolescence.html>
- <http://www.nlm.nih.gov/medlineplus/ency/article/002003.htm>
- <http://www.cognitie.nl/events/adolescent-development-processes-of-coordination-change/view>
- <http://bmj.bmjournals.com/cgi/content/full/330/7486/301>
- <http://www.ext.vt.edu/pubs/family/350-850/350-850.html>

Suggested Broad Topics for Master's and Doctoral Research

- **Developmental aspects and strategies for improvement of development**
 - Developmental assessment of early childhood years, school age, Assessment of adolescents aptitudes, Interests, personality etc
 - Intervention programmes for infants, young children and school age children from disadvantaged families.
- **Child rearing practices**
 - Child rearing practices in village community.
 - Intervention package for parents on child rearing.
 - Role of media and community in improvement of child rearing practices.
 - Alternative childcare systems and their impact
- **Adolescents problems**
 - Stress among adolescents
 - Strategies used by parents to cope with adolescents problems.
 - Development of moral values among adolescents.
 - Gender discrimination among rural adolescents.
- **Rehabilitation of senior citizens**
 - Study on rehabilitation services of institutions for senior citizens
 - Problems of senior citizens

- Life satisfaction
- Assessment of the senior citizen abilities and remedial programmes
- **Mental health**
 - Human ecology system and mental health of adolescents.
 - Promoting rural child health care practices through community participation.
 - Urban / rural family environment as affecting child's development and strategies
 - Working women and their problems
 - Family conflicts and crises
- **Children with special needs**
 - Study on selected special need children/ exceptional children.
 - Problems faced by parents of exceptional children.
- **Behaviour analysis**
 - Mother – child interaction
 - Adult interactions
 - School children and adolescent interactions

TEXTILE AND APPAREL DESIGNING
Course Structure - at a Glance

CODE	COURSE TITLE	CREDITS
TAD 501*	FIBRE CHEMISTRY	2+1
TAD 502*	TEXTILE QUALITY ANALYSIS	2+1
TAD 503*	ADVANCED TEXTILE DESIGN	1+2
TAD 504*	ADVANCED PATTERN MAKING	1+2
TAD 505	HISTORIC TEXTILES AND COSTUMES	2+1
TAD 506	FASHION DRAPING AND CUSTOM CLOTHING	0+3
TAD 507	APPAREL QUALITY ANALYSIS	1+1
TAD 508	ADVANCED DYEING & PRINTING	1+1
TAD 509	TEXTILE FINISHES	1+1
TAD 510	COMPUTER AIDED TEXTILE & APPAREL DESIGNING	1+2
TAD 511	HOME TEXTILES	1+2
TAD 512	SOCIO-PSYCHOLOGICAL ASPECTS OF CLOTHING	2+0
TAD 513	TEXTILE INDUSTRY & TRADE	2+0
TAD 514	KNITTING TECHNOLOGY	1+1
TAD 515	FASHION ACCESSORIES	1+1
TAD 516	CONSUMER BEHAVIOUR- TEXTILES & APPAREL	1+1
TAD 591	MASTER'S SEMINAR	1+0
TAD 599	MASTER'S RESEARCH	20
TAD 601**	FUNCTIONAL CLOTHING	2+1
TAD 602**	TECHNICAL TEXTILES	2+1
TAD 603**	TEXTILE ECOLOGY	3+0
TAD 604	SOURCING AND GLOBALIZATION	2+1
TAD 605	TEXTILE AUXILIARY	1+1
TAD 606	PRODUCT DEVELOPMENT	1+2
TAD 607	TEXTILE CONSERVATION	1+1
TAD 608	COLOUR APPLICATION IN TEXTILES	1+1
TAD 609	APPAREL INDUSTRY MANAGEMENT	1+1
TAD 610	NON-WOVEN TEXTILES	2+0
TAD 611	RECENT ADVANCES IN TEXTILE AND APPAREL DESIGNINGS	2+0
TAD 691	DOCTORAL SEMINAR I	1+0
TAD 692	DOCTORAL SEMINAR II	1+0
TAD 699	DOCTORAL RESEARCH	45

* Compulsory for Master's programme; ** Compulsory for Doctoral programme

TEXTILE AND APPAREL DESIGNING

Course Contents

TAD 501 FIBRE CHEMISTRY 2+1

Objective

To acquaint student about the polymer and chemistry of textiles fibers and impart them knowledge about structure-property relations of textile fibers and acquaint with recent development in fibers.

Theory

UNIT I

Chemistry of polymers- Polymerisation, types, degree & characteristics; Structure of textile fibres- general, molecular bonding, length, orientation, and requirements of fibre forming substances.

UNIT II

Structure-property relations of the fibres - repeating units, bonds, reactive groups and reactions of cotton, viscose rayon, silk, wool, linen, polyester, acrylic, spandex and minor fibres; action of heat, light, bleach and micro-organisms on different fibres; commercial processes of fibres.

UNIT III

Bi-component & biconstituent fibres- types of configurations & characteristics.

UNIT IV

Study of new fibres; Blending –principles, technology & types.

Practical

Fibre testing: cross sectional view of cotton, wool, silk, polyester and acrylic Chemistry of cellulose , protein and synthetics– effect of heat, acid, alkali, bleaches and solvents; detection of damage caused to cellulose; Quantitative analysis of fibre blends and mixtures; Visit to textile analysis lab.

Suggested Readings

- Andrea Wynne 1997. *Textiles*. Macmillian.
- Bernard P Corbman 1983. *Textiles - Fiber to Fabric*. McGraw-Hill.
- Lyle DS.1976. *Modern Textiles*. John Wiley & Sons.
- Marjory L. Joseph 1966. *Introductory Textile Science*. Rinehart & Winston.
- Vilensky G. 1987. *Textile Science*. CBS.
- Wingate IB. 1984. *The Fabrics - Their Selection*. Prentice Hall.

TAD 502 TEXTILE QUALITY ANALYSIS 2+1

Objective

To develop an understanding of methods and techniques used to analyze textile fiber, yarn and fabrics for end – use performance, different testing equipments, their underlying principles and the internationally accepted standards, test methods and the language of measurements, various structural properties of textile and relate them to end use fabric performance and product and analyse and interpret the results and predict the general textile.

Theory

UNIT I

Importance of textile testing, standardization and quality control, functions of BIS and other standards.

UNIT II

Sampling techniques- fibre, yarn & fabric; Moisture relations in textiles-effect of moisture, humidity on properties of textiles, standard conditions of testing.

UNIT III

Fibre testing - Length, linear density, maturity; Yarn testing – yarn number, single & lea strength, twist, crimp & evenness.

UNIT IV

Fabric testing –weight, thickness, strength – breaking, tear & bursting; abrasion resistance – flat, flex; Pilling; crease recovery; stiffness; drapability; air permeability; thermal properties; flammability & assessment of other safety aspects in textiles; water permeability – repellency, wicking and dimensional stability; comfort & fabric handle measurement.

Practical

Fibre testing – Staple length, effective length, linear density, maturity ;Yarn testing – yarn number, twist, crimp, evenness and strength ; Fabric testing - weight, thickness fabric count, balance, strength – breaking, tear & bursting; abrasion resistance – flat, flex; pilling; crease recovery; stiffness; drapability; air permeability; thermal properties; water permeability, wicking and dimensional stability; Processing & statistical analysis of the test data.

Suggested Readings

AATCC Technical Manual. 1966. Vol. 68. USA American Association of Textile Chemist.

AATCC Technical Manual. 1993. Vol. 69. USA American Association of Textile Chemist.

AATCC Technical Manual. 1995. Vol. 70. USA American Association of Textile Chemist.

AATCC Technical Manual. 1998. Vol. 73. USA American Association of Textile Chemist.

Angappan 1987. *Textile Testing*. SSM Institute of Technology, Komarapalayam.

Booth JL. 1983. *Principles of Textile Testing*. Butterworth.

ISI Hand Book of Textile Testing. 1982. ISI.

TAD 503

ADVANCED TEXTILE DESIGNING

1+2

Objective

To develop knowledge about different looms, types of weaves, analyze different weave patterns and learn principles of creating design through weaving.

Theory

UNIT I

Shuttleless looms- projectile, rapier, air jet, water jet weaving; multiple-shed loom, automatic controls in modern looms & scope of modern methods of weaving; detailed pre-weaving processes.

UNIT II

Study of design, draft & peg plan for different weaves; weave calculations; advantages & disadvantages.

UNIT III

Complex & fancy structures – leno, crepe, double cloth, honey comb, mock-leno, diaper, diamond, dobby, warp and weft figuring, terry and pile, huck –a-back.

UNIT IV

Dobby & jacquard patterning devices; methods of making carpets.

Practical

Weaving- Preparation of draft plans, peg plans etc. for all weaves ;Analysis of woven samples ; 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.

Suggested Readings

Grosicik 1975. *Watson's Textile Design & Colour*. Butterworths.

Grosick ZJ. 1980. *Watson's Advanced Textile Design*. Universal Publ.

Grosick ZJ. 1989. *Watson's Advanced Textile Design - Compound Woven Structures*. Universal Publ.

Marjory Joseph 1972. *Illustrated Guide for Textiles*. Rine Hort & Winsoten, New York.

Radha Krema 1971. *Manual of Non Wovens*. Textile Trade Press.

Sen Gupta 1959. *Weaving Calculations*. DB Taraporawala Sons.

Talukdar MK. *Weaving Machines, Mechanism and Management*. Mahajan Publ.

TAD 504

ADVANCED PATTERN MAKING

1+2

Objective

To impart indepth knowledge of style reading pattern making and garment construction techniques, enable students to make advance pattern and obtain perfect fit and harmony between the knitted fabric and design of the garment.

Theory

UNIT I

Advanced techniques of pattern making - incorporating style lines & fullness.

UNIT II

Principles of contouring, surplice/off shoulder and halter designs; built-in necklines, cowls and collars.

UNIT III

Skirts, advanced sleeve variations, exaggerated armholes, pockets, bias cut dresses.

UNIT IV

Jackets, types of pants; pattern adoption to knits.

Practical

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- kimono and raglan variations; Skirts; Pants- pant length variations, bell bottom pants, body

fitting pants, and other types; application of pattern making techniques to garment designing and construction.

Suggested Readings

Bane A .1996. *Creative Clothing Construction*. MC Graw-Hill.

Connie Amaden-Crawford 1989. *The Art of Fashion Draping*. Fair Child Publ.

Janine Mee & Michal Purdy 1987. *Modelling on the Dress Stand*. BSP Professional Books.

Natalie Bray 1994. *Dress Fitting*. Blackwell.

TAD 505

HISTORIC TEXTILES AND COSTUMES

2+1

Objective

To make them aware of the historical development in western textiles and costumes from ancient world to 21st century and acquaint them about male and female textiles and costumes of India and other countries.

Theory

UNIT I

Study of traditional dyed, printed, embroidered and non-woven textiles of America, China, Egypt, France.

UNIT II

Study of traditional dyed, printed, embroidered and non-woven textiles of Greece, Japan and Rome – fibre content, fabrics, motifs, colours, dyes and designs used.

UNIT III

History and evolution of traditional costumes of America, China, Egypt, France.

UNIT IV

Greece, Japan and Rome through ages for women and men including the accessories- head dresses, jewellery, footwear and their significance in socio-economic status of the society.

Practical

Collection of traditional textile print & surface designs of the above countries and documentation; Designing textile surface with combination of motifs of different countries; Documentation of various styles of men & women's garments of the above countries; Designing outfits for men & women to suit to the current trends; Visit to a museum.

Suggested Readings

Annalce Gold.1987. *One World of Fashion*. Fair Child Publ.

Blanche Payne. 1965. *History of Costumes from the Ancient Egyptian to the Twentieth Century*. Harper & Row.

Jack Cassin-Scott. 1994. *The Illustrated Encyclopedia of Costume and Fashion*. Studio Vista.

John Peacock. 1996. *A Complete Guide to English Costume Design and History - Costume 1066–1990's*. Thames & Hudson.

Pamela Stecker. 1996. *Fashion Design Manual*. Mac Millan.

TAD 506 FASHION DRAPING AND CUSTOM CLOTHING 0+3

Objective

To enable student to make pattern from sketch/photograph and enable them to obtain perfect fit and harmony between the fabric and design of the garment.

Practical

Draping, trueing and stitching– dartless shirt, surplice front, bustier; Draping and stitching skirts; Draping collars, sleeves, lowered exaggerated armhole sleeve; Cowls; Flounces, ruffles and peplums; Dresses – sundress and sculptured dress; Draping knits; Designing custom clothing;. Analysis and presentation.

Suggested Readings

Bane A. 1996. *Creative Clothing Construction*. Mc Graw-Hill.
Connie Amaden-Crawford. 1989. *The Art of Fashion Draping*. Fair Child Publ.
Janine Mee & Michal Purdy. 1987. *Modelling on the Dress Stand*. BSP Professional Books.
Natalie Bray. 1994. *Dress Fitting*. Blackwell.

TAD 507 APPAREL QUALITY ANALYSIS 1+1

Objective

To familiarize students with the different apparel quality standards, their underlying principles and the international accepted standards and test methods and develop ability to analyze and interpret the results and predict the general quality control.

Theory

UNIT I

Quality control- scope and functions of quality control; Quality specifications and standards in raw material purchasing, quality control in spreading, cutting and bundling products.

UNIT II

quality factors in sewing, pressing, folding & finishing; quality aspects of trims and fashions.

UNIT III

Standards- sources of application; national and international organisation for standards.

UNIT IV

Inspection techniques; quality auditing system.

Practical

Visit to an apparel industry; Inspection of raw material – classification and analysis of fabric defects; Study of specification sheets - various garments; Analysis of sewing & fastners quality; Study of quality auditing system in the industry; Quality analysis of selected garments available in the market.

Suggested Readings

Gerry Cooklin. 1991. *Introduction to Clothing Manufacture*. Blackwell.
Gerry Cooklin. 1997. *Garment Technology for Fashion Designer's*. Blackwell.
Jacob Solinger. 1980. *Apparel Manufacture*. Van Nostrand Reilfold.
Latham Barbara & Carr Harold 1999. *The Technology of Clothing Manufacture*. Blackwell Science.

Pradeep V Mehta. 1998. *Managing Quality in Apparel Industry*. New Age International.
Ruth Glock. 1990. *Apparel Manufacturing*. Macmillan Publ.

TAD 508 ADVANCED DYEING & PRINTING 1+1

Objective

To understand the theory of dyeing in relation to various classes of dyes and its application, inculcate awareness of the different methods of printing and appreciate the technical advantages of each and develop technical competency in printing with different dyes on different fabrics.

Theory

UNIT I

Concept of colour and its relation to light; classification and types of dyes/colouring matter.

UNIT II

Chemistry of dyes and pigments- composition, structure, properties, affinity towards fibres, method of application, fixing, after treatments and fastness properties.

UNIT III

Eco-friendly natural dyes and role of mordants; advanced dyeing techniques.

UNIT IV

Printing auxiliaries; advanced printing techniques; assessment for colour fastness.

Practical

Preparation of shade cards with various class of dyes and colour matching; Natural dyes – Dyeing with different mordants; advanced techniques of fabric printing; theme based project works.

Suggested Readings

Hall AJ. 1955. *Handbook of Textile Dyeing & Printing*. The National Trade Press.
Joyce Story. 1974. *The Thames & Hudson Manual of Textile Printing*. Thames & Hudson.
Shenai VA. 1994. *Technology of Dyeing*. Sevak Publ.
Shenai VA. 1985. *Technology of Printing, Technology of Textile Processing*. Vol. IV. Sevak Publ.
Sule AD. 1997. *Computer Colour Analysis Textile Application*. New Age International.
Vidyasagar PV. 1998. *A Handbook of Textiles*. Mittal Publ.
Vilensky G. 1987. *Textile Science*. CBS.

TAD 509 TEXTILE FINISHES 1+1

Objective

To study the chemicals used in textile processing from sizing to finishing, along with the essential properties of raw materials used in their manufacture and study the recent developments in various finishing processes.

Theory

UNIT I

Finishing – Concept, scope & importance; Functional finishes – soil repellent, soil resistant, soil release; antistatic, anti-pilling; wash and wear; crabbing, decating, water proof & repellency, mildew-proof; flame resistant and flame proof; anti-bacterial.

UNIT II

Eco-friendly finishing with enzymes; comfort imparting finishes with reference to the application, uses, characteristics, problems and evaluation.

UNIT III

Textured yarns & fabrics; finishing of blended fabrics.

UNIT IV

Recent advances in finishing.

Practical

Identification of finishes; Preparation of fabric for finishes; application of selected finishing agents and their assessment; Eco-friendly finishing of textiles; Assessment of properties of the finished fabrics ;Study of labels pertaining to finishes; Visit to processing and finishing units

Suggested Readings

- Bernard P Corbman. 1983. *Textiles - Fiber to Fabric*. McGraw-Hill.
Nisbel H. 1978. *Grammer of Textile Design*. D.B. Taraporevale Sons.
Prayag RS. 1988. *Textile Finishing*. Sri T Printers.
Shani. 1976. *Chemistry of Textile Axillaries*. Sevak Publ.
Shenia. 1995. *Technology of Bleaching & Mercerizing*. Sevak Publ.
Vaidya A & Trivedi 1975. *Textile Auxiliaries & Finishing Chemicals*. ATIRA, Ahemadabad.
Vilensky G. 1987. *Textile Science*. CBS.
Wynne A. 1997. *Textiles*. Macmillian.

TAD 510 COMPUTER AIDED TEXTILE & APPAREL DESIGNING 1+2

Objective

To introduce students to the various Textile and Apparel Designing designing concepts through CAD and introduce them about various advanced Textile and Apparel Designing software packages and develop the creativity of the students in use of 3D softwares.

Theory

UNIT I

Ideal workstation for CAD- Selection of suitable hardware & software; role of computers in Textile and Apparel Designing production.

UNIT II

Types of images and characteristics; saving of images; colour ways in computers, creation of new designs for textile surface - planning for various weave designs – stripes, checks etc; leading to application and change of fabric texture, print and colour.

UNIT III

Creation of designs in apparel; texture variation by using effects like embossing, blooming, transparency and translucent look on a garment.

UNIT IV

Use of 3 D softwares for customisation of created designs as per end uses.

Practical

Revision and practice on CAD commands; Creating stripes and checks using various commands; Creating weave library and assigning weaves to the designed stripes and checks for weaving ;Introduction to commands from different tool groups- file menu, freehand tools, geometric tool, selection tool, selection utility tool, colour utilities tool and general utilities tool; Developing motifs by scanning and drawing using the CAD commands; Creating full design/ repeat using drop devices; Creating weaves and storing in Jacquard weave library; Assigning weaves to the design plan. Learning print commands- simulation and graph/ point paper; Developing a computer aided portfolio of different motifs; Introduction to Prima Vision software; Command bars and assistants; 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.

Suggested Readings

- Davis L Msrisn. 1980. *Visual Design in Dress*. Prentice Hall.
Prakash K. 1994. *Impression – A Classic Collection of Textile Designs*. Design Points.
Prakash K. 1995. *Traditional Indian Motifs for Weaving & Textile Printing*. Design Points.
Rene Weiss Chase 1997. *CAD for Fashion Design*. Prentice Hall.
Winfred Aldrich 1992. *CAD in Clothing & Textiles*. BSP Professional Books.
Yates MP. 1996. *Textiles – A Handbook for Designers*. W.W. Norton.

TAD 511

HOME TEXTILES

1+2

Objective

To develop awareness about different home textiles and furnishing and acquaint students about education, care and maintenance of different home textiles.

Theory

UNIT I

History and evolution of household textiles and furnishings, importance and their functions.

UNIT II

Study of various household textiles and furnishing; Properties and application; Non-woven furnishing materials.

UNIT III

Study of various styles of household textiles and furnishing and their accessories.

UNIT IV

Selection, care and maintenance of different household textiles; floor coverings, rugs and carpets; Types and role of under linings in draperies.

Practical

Study of various household textiles-fibre content, yarn type, weave, design and finish. Bed linen, towel, table napkins, kitchen aprons and dusters, table mats; types of curtains & draperies & valences; Slip covers, bed

spreads, table linen; Diwan, cushions, sofa covers and bolsters; development of theme board and Project work.

Suggested Readings

- Brilliant J. 1986. *The Soft Furnishing Book*. Conran Octopus.
Macalls S. 1972. *Sewing in colours, Home-making, Tailoring, Mending, Soft Furnishing*. Hawlyn.
Naik Shailja D. 1996. *Traditional Embroideries of India*. A.P.H. Publ.
Pat Jones 1979. *Creative Sewing - Household Linen*. A Studio Vista Book.
Rutt Anna Hong 1967. *Home Furnishing*. John Wiley & Sons.
Taylor P. 1990. *Computers in Fashion Industry*. Heinemann.

TAD 512 SOCIO-PSYCHOLOGICAL ASPECTS OF CLOTHING 2+0

Objective

To study the psychological effects of clothing on the individual in social situations and develop the understanding about self esteem and clothing symbolism.

Theory

UNIT I

Origin of clothing, use of clothing among primitive people; Functions and theories of clothing; Clothing in relation to culture.

UNIT II

Psychological aspects of clothing-self respect, self-enhancement, self expression, gender desirability and individuality; Socio-psychological aspects of clothing among children; significance of uniforms and national costumes.

UNIT III

Clothing symbolism, fashion, fad, custom, tradition, culture contact, status, youth, education, social agitation of women and technology and role of legislation.

UNIT IV

Clothes for conformity, mobility, aesthetic appearance; Health and sanitation related to clothing.

Suggested Readings

- Cranz RLM. 1972. *Clothing Concepts*. Collier Mcmillan.
Horn MJ. 1981. *The Second Skin – An Interdisciplinary Study of Clothing*. Hughton Mifflin.
Marion S & Hill House 1963. *Dress Selection & Design*. The Macmillan.
Mary Kefgen & Phyllis 1971. *Individuality in Clothing Selection & Personal Appearance*. The Macmilliam Co.
Ryan MS. 1966. *Clothing - A Study in Human Behaviour*. Winston.

TAD 513 TEXTILE INDUSTRY AND TRADE 2+0

Objective

To enable the students to recognize the place of textile industry in the Indian economy, industry trends and develop awareness about the standardization of textile goods, consumer agencies and services.

Theory

UNIT I

Textile industry- history and development.

UNIT II

Status of textile industry in India - cotton, wool, silk, rayon, jute, handlooms, and knitting industry; Government Textile & Clothing policies.

UNIT III

Textile Research Associations; Apparel Export promotion Council, Textile crafts councils.

UNIT IV

Study of Apparel parks, GATT, TUF, ISO 9000 & ISO 14000 standards

Suggested Readings

Karpan 2004. *Change in Trends in Apparel Industry*. Abiskeh Publ.

Kathryn Moore Greenwood 1978. *Fashion Innovation & Marketing*. Macmillan Co.

Kitty Dickerson 1995. *Textiles & Apparels in Global Economy*. Merrill Prentice Hall.

TAD 514 KNITTING TECHNOLOGY 1+1

Objective

To familiarize students with special techniques of knitted fabric production and creation of new designs and acquaint them with the art of handling different fabric and styles using knits.

Theory

UNIT I

Advance study of knit fabrics made on warp & weft knitting machines; different types of knitting machines and knitting gauge; types of yarns & web formation.

UNIT II

Production technology of knitted fabrics and garments.

UNIT III

CAM and automation in knit wear.

UNIT IV

Finishing requirements of knitted fabrics; quality control in production of knitted fabrics.

Practical

Study & identification of different types of knitted fabrics; Practicing the knitting on flat knitting machines – Familiarisation of commands; making samples of different designs produces ;Making samples of different designs using multicoloured / and complex designing techniques; Visit to a knitted garment unit.

Suggested Readings

Terry Brackenburry. 1996. *Knitted Clothing Technology*. Blackwell.

TAD 515 FASHION ACCESSORIES 1+1

Objective

To familiarize the students with special techniques of creation of fashion accessories and develop skill in them for the development of fashion accessories.

Theory

UNIT I

Introduction to fashion accessories, tools and equipment.

UNIT II

Fashion trends in accessories.

UNIT III

Product development and designing- trims, foot wear, handbags, belts, buttons and buckles, hats, scarves.

UNIT IV

Hosiery, jewellery, neck ties, handkerchiefs, eye wear and watches.

Practical

Market survey; Creation of theme boards for all accessories; Product development and designing – trims; Product development and designing – buttons and buckles; Product development and designing - foot wear; Product development and designing - handbags; Product development and designing - belts; Product development and designing - hats; Product development and designing - scarves; Product development and designing - jewellery Product development and designing –neckties; Product development and designing -handkerchiefs Cost analysis of all items.

Suggested Readings

Bhargav R. 2005. *Design Ideas & Accessories*. Jain Publ.

Carr Harold & John Pomeroy 1996. *Fashion Design & Product Development*. Blackwell Science.

Taylor P. 1990. *Computers in Fashion Industry*. Heinemann.

TAD 516 CONSUMER BEHAVIOR - TEXTILES & APPAREL 1+1

Objective

To provide the indepth knowledge of consumer behavior, consumer protection measures and give them knowledge about retailing in fashion industry.

Theory

UNIT I

Introduction & Overview; the Consumer perspective and view points; understanding the consumer; Environmental Influence; Individual Differences.

UNIT II

Consumer Resources: Involvement and Motivation Knowledge, Attitudes: Individual difference in behaviour; Psychological Processes.

UNIT III

Consumer Decision Processes and Behaviour; Consumer Analysis & Marketing Strategy; Retailing; Consumer Trends; Market Segmentation; Diffusion of innovation.

UNIT IV

Counterfeit textiles and consumer protection measures; Global Consumer Markets.

Practical

Conducting survey to study the consumer behaviour & preferences of fabric, colour, texture, style of garments etc. from various sectors; Analysis of market; Identification of areas of consumer education in the field of apparel & textiles; Developing educational material for education consumers; Educating selected consumer groups in the identified areas.

Suggested Readings

- Cranz RLM. 1972. *Clothing Concepts*. Collier Mcmillan.
Flugel JC. 1950. *The Psychology of Clothes*. Prentice International.
Fringes GS. *Fashion from Concept to Consumer*. Prentice International.
Mary Kafgen & Phyllis 1971. *Individuality in Clothing Selection & Personal Appearance*. The Macmillian Co.
Ryan.M.S. 1966. *Clothing - A Study in Human Behaviour*. Winston.

TAD 601 FUNCTIONAL CLOTHING 2+1

Objective

To enable the students to recognize the importance of portable clothing in textile industry and develop skills in them for designing functional clothing for farm, industrial workers and fire fighters etc.

Theory

UNIT I

Clothing as a portable environment; Comfort in Clothing - principles of heat transfer in apparels, thermal insulation, breathable textiles, clothing systems for thermal protection.

UNIT II

Designing comfortable apparel suitable for warm and cool weather; Impact protective clothing; providing mobility in clothing- Sports clothing – Requirements, importance and designing; fastening systems in clothing; meeting special needs with clothing.

UNIT III

Clothing design for military, clothing design to accommodate physical disabilities & irregularities; clothing design for expecting and lactating mothers.

UNIT IV

Protective clothing- farm, industrial workers, fire fighters.

Practical

Survey on selected functional clothing available in the market; Designing clothing for pregnant women and nursing mothers; Designing garments for physically challenged and analysis; Designing protective clothing for pesticide applicators, selected industrial workers and fire fighters and analysis; Designing locale specific sports clothes and analysis.

Suggested Readings

- Cookling G. 1997. *Garment Technology for Fashion Designers*. Blackwell Science.
Kilgus R. (Ed.) 1999. *Clothing Technology*. Europa Lehrmittel, Textile Institute, Manchester.
Tate M & Glisson O. 1967. *Family Clothing*. John Wiley & Sons.

TAD 602 TECHNICAL TEXTILES 2+1

Objective

To acquaint the students with the techniques of development in nano fiber and micro fibres and study the recent development in the field of technical textiles.

Theory

UNIT I

Developments in Nano-fibre and microfibre non-wovens; importance and classification of technical textiles- types of fibers, materials.

UNIT II

Medical Textiles; Special textiles for industrial applications; automotive textiles; Industrial textiles.

UNIT III

Agro textiles; geo-textiles; Phase Change Materials; Shape Memory Materials; Chromic Materials.

UNIT IV

Conductive Materials and other Functional Materials- characteristics and its applications; Smart textiles – factors affecting the selection and uses.

Practical

Survey of available technical textiles; development of library of technical textiles; Project work.

Suggested Readings

Allison Mathews 1994. *Medical and Hygiene Textile Production*. Intermediate Technology Publ.

Cookling Gerry 1997. *Garment Technology for Fashion Designers*. Blackwell Science.

Padmanabhan AR. 1988. *A Practical Guide to Textile Testing*. SITRA, Coimbatore. Prentice Hall.

Skinkle JH. 1972. *Textile Testing*. D.B. Taraporewala.

TAD 603

TEXTILE ECOLOGY

3+0

Objective

To develop awareness about types of pollution from textiles processing units and their effect and understand the health hazards of textile workers and their remedial measures.

Theory

UNIT I

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.

UNIT II

Health hazards of textile workers working in various textile units and their remedial measures. Banned dyes and auxiliaries.

UNIT III

Eco-friendly production and processing of textiles with special reference to organic and naturally coloured cotton, natural dyes and detergents etc.

UNIT IV

Indian and International environmental legislations. Eco labeling, management and auditing.

Suggested Readings

Mark KH, Woodlings & Atlas SM. 1971. *Chemical after Treatment of Textiles*. John Wiley & Sons.

Skinkle JH. 1972. *Textile Testing*. D.B. Taraporewala.

TAD 604

SOURCING AND GLOBALISATION

2+1

Objective

To develop the knowledge about the key issues of globalisation and skill in testing and evaluation of nonwoven textiles.

Theory

UNIT I

Supply chain management in Textiles & Apparel- principles and role in branding; evaluation of key issues facing Textile and Apparel Designing businesses in global markets considering ethical, economic, political, social and professional implications.

UNIT II

Developments in textile & apparel industries before and after phasing out quota system.

UNIT III

Recent trends in major exporting countries, trade policies; integrated strategies towards fair globalisation- improving competitiveness and social responsibility in the industry.

UNIT IV

Actions, policies and shared responsibilities – role of governments, manufacturers, buyers, trade unions and Multinational enterprises.

Practical

Demographics related to textiles & apparel of various countries before and after phasing out quota system; Analysis of opportunities and extent of utilisation by the leading countries - sourcing options considering quality, production capabilities, workers' rights, investment risk, logistics, legal compliance, and trade policies; Study on supply chain management in textiles & apparel – preparation of flow diagrams describing the supply system in different countries and analysis; Project work based on secondary data.

Suggested Readings

Easey Mike 2000. *Fashion Marketing*. Blackwell Science.

Jarnow J & Guessio M. 1991. *Inside the Fashion Business*. Prentice Hall.

Paola de Helena & Muellor Stewart Carol 1986. *Marketing Today's Fashion*. Prentice Hall.

TAD 605

TEXTILE AUXILIARY

1+1

Objective

To impart the knowledge about various textiles auxiliary used in textile processing and finishing with eco-friendly auxiliaries.

Theory

UNIT I

Definition, history, selection & classification of auxiliaries; important processing operations in which auxiliaries are used.

UNIT II

Chemistry and synthesis of surface active agent- essential requirements of a surfactant, classification, anionic surfactants, cationic agents, non-ionic surfactants, biodegradability of surfactants.

UNIT III

Finishing Agents-Stiffening agents, cross linking agent, optical brightening agent, softeners, water repellents, Flame retarding agent, antistatic agent, soil release agent, antipilling agent, mothproof and mild proof agents.

UNIT IV

Methods of Evaluation of Textile Auxiliaries; eco-friendly auxiliaries.

Practical

Collection of various surfactants available in the market; Analysis of the surfactant properties in selected surfactants ;Preparation of various sizing combinations; Analysis of the sized samples and selection of suitable combinations; Assessment whiteness of fabrics finished with various bleaches & optical brightening agents; Assessment of finished fabrics with selected finishing auxiliaries; Finishing with eco-friendly auxiliaries and assessment.

Suggested Readings

Bogley M. 1977. *Textile Dyes, Finishing and Auxiliaries*. Garland Publ.
Fiscus G & Grunenwald D. 1996. *Textile Finishing: A Complete Guide*.
Textile Institute, Manchester.
Hall KJ. 1966. *Textile Finishing*. Heywood.

TAD 606

PRODUCT DEVELOPMENT

1+2

Objective

To impart the knowledge about various product standards and product specifications and the process of product development towards market need.

Theory

UNIT I

Product development – definition, history, Objective; product design & manufacturing, use of merchandising calendar.

UNIT II

Product testing; product economics; product standards and specifications; product quality control; technical services &, marketing.

UNIT III

Organizational behaviour; accounting; product intellectual property law.

UNIT IV

Role of computers in product development and related softwares.

Practical

Product review – preparation of product profile; Survey on selected products from textile & apparel field; Product testing & analysis – selected textiles & apparel – quality, serviceability, material, construction performance, products standards, specification and cost; Product planning-design, production, relative to cost requirements, aesthetic and functional requirements, producibility, and market needs; Project work.

Suggested Readings

Bhargav R. 2005. *Design Ideas & Accessories*. Jain Publ.
Carr Harold & John Pomeroy 1996. *Fashion Design & Product Development*. Blackwell Science.

TAD 607 TEXTILE CONSERVATION 1+1

Objective

To develop the awareness about textiles conservation and skill in assessment of damage, repair and stabilization of textiles.

Theory

UNIT I

Importance of textile conservation; Various methods for analysis of textiles -fibre content, yarn & fabric structure.

UNIT II

Damage to textiles – pests, micro organisms etc.; Condition assessment, repair, and stabilization of textile and apparel designing in museum collections; Dry, aqueous and solvent cleaning.

UNIT III

Examination of storage and exhibition techniques, materials, and conditions.

UNIT IV

Principles of cleaning fragile textiles; Proper conditions for storing and display of various textiles.

Practical

Visit to a museum and study of various textile conservation methods; Analysis of aged textiles - fibre content, yarn & fabric structure; Assessment of damage; Repair and stabilisation of textiles; Exposure to cleaning techniques; Project work.

Suggested Readings

- Harris J. (Ed.). 1993. *Five Thousand Years of Textiles*. British Museum.
Leene JE. 1972. *Textile Conservation*. Butterworths.
Williams JC. 1977. *Preservation of Paper and Textiles of Historic and Artistic Value*. American Chemicals Society.

TAD 608 COLOUR APPLICATION IN TEXTILES 1+1

Objective

To develop the knowledge about conditions for dyeing, printing and finishing treatments and skill in analysis of dyed fiber, yarn and fabric. colour science and computer colour matching.

Theory

UNIT I

Detailed theory of colour science and computer match prediction in dyeing fibres, yarns, and fabrics.

UNIT II

Spectrophotometers for colour systems, software & hardware for colour systems.

UNIT III

Objective specification of colour, colour difference, shade sorting, various colour spaces.

UNIT IV

Assessment of whiteness, computer match prediction algorithms based on colour theory and numerical analysis.

Practical

Laboratory techniques for assessing colour strength and reflectance; developing arbitrary scales; Familiarisation of commands to use software

in colour spectrophotometer; Analysis of dyed fibre, yarn and fabrics; Creation of data files and reproduce dyed samples with the match prediction; Analysis of colour fastness of dyed samples; management and interpretation of data generated.

Suggested Readings

Booth JE. 1996. *Principles of Textile Testing*. CBS.

Padmanabhan AR. 1988. *A Practical Guide to Textile Testing*, SITRA, Coimbatore. Prentice Hall.

TAD 609 APPAREL INDUSTRY MANAGEMENT 1+1

Objective

To introduce the students to various trends in management of garment industry and understand various export and import policies.

Theory

UNIT I

Complexity of management in garment industries- Objective and expectations; status of garment industry in India-production, marketing, distribution, consumption and export trends over last five years.

UNIT II

Personnel management in domestic and export apparel industry; techniques in managerial application of cost-volume-profit analysis; productivity analysis; technology upgradation of apparel units - CAD & CAM; productivity rate.

UNIT III

Government policies in export and imports; effect of trade globalization; problems of apparel industry and remedial measures.

UNIT IV

Trends in management, infrastructure facilities and incentives offered for starting a garment industry.

Practical

Visit & survey in domestic and export garment industries that produce shirts, trousers & women's garments; Compilation of data as per the labour & machinery output; Drawing floor plans of the industries; Analysis of garment industries in terms of inputs and outputs; Determination of productivity of the industry & comparison; SWOT analysis of the industries.

Suggested Readings

Gerry Cooklin. 1991. *Introduction to Clothing Manufacture*. Blackwell.

Gerry Cooklin. 1997. *Garment Technology for Fashion Designer's*. Blackwell.

Jacob Solinger 1980. *Apparel Manufacture*. Van Nostrand Reilfold.

Pradeep V Mehta 1998. *Managing Quality in Apparel Industry*. New Age International.

Ruth Glock 1990. *Apparel Manufacturing*. Macmillan.

TAD 610 NON-WOVEN TEXTILES 2+0

Objective

To develop the knowledge about fundamental techniques of nonwoven textiles and skill in testing and evaluation of nonwoven textiles.

Theory

UNIT I

Introduction, history, terms and definitions of nonwoven fabrics, characteristics and properties of Nonwoven fabrics, polymers, fibres and binders.

UNIT II

Terminology of non-woven; and types of web formation, bonding and finishing processes, felt fabrics, needle punched fabrics, spun laced fabrics, dry & wet laid non-woven fabrics; spun bonded and stitch bonded non-woven fabrics; properties and end uses; finishing non-woven.

UNIT III

Trends in non-woven technology, scope of non-woven textiles, identification of nonwoven fabrics.

UNIT IV

Testing and evaluating of nonwovens; Laminated fabrics.

Suggested Readings

Gohi EG & Vilensky. 1993. *Textile Science*. CBS.

Hall AJ. 1995. *Students Hand Book of Textile Science*. Newness Butterworths.

Lewin M & Pearce EM. (Eds.). 1998. *Handbook of Fibre Chemistry*. Marcel Dekker.

Vidyasagar PV. 1998. *A Handbook of Textiles*. Mittal Publ.

TAD 611

RECENT ADVANCES IN TEXTILE AND APPAREL 2+0 DESIGNING

Objective

To provide indepth knowledge of latest developments in textile and apparel designing and help them to identify thrust areas of reseach.

Theory

UNIT I

Recent reearches in production and manufacture of textile fibers, yarns and fabrics.

UNIT II

Chemical processing of natural and synthetic textiles and their conversion into clothing.

UNIT III

Developments in the field of functional textiles and clothing; use of special techniques in textile processing.

UNIT IV

Thrust areas of contemporary research andfuture projections.

Suggested Readings

Journals of Apparels and Textiles

TEXTILE AND APPAREL DESIGNING

List of Journals

- **Man Made Textile in India**
Sasmira Marg, Inorli, Mumbai-25, www.sasmira.org
- **Textile Asia**
Business Press Ltd., G.P.O. Box-185, Hong Kong, SAR, China
- **Journal of the Textile Association**
The Textile Association (India), Santosh' 72-A, Dr. M.B. Pant Road, Shivaji Park, Dadar, Mumbai-28.
- **Textile Research Journal**
602, Prospect Avenue, P.O. Box 625, Princeton, New Jersey – 08542, www.textile.research.journal.com
- **Textile Dyer and Printer**
Sevak Publications, Room No. 9, Wellington, Estate, 3rd floor, 24-Commander-in-Chief Road, Madras-600105
306, Shri Hanuman Industrial Estate, G.D. Ambedkar Road, Wadala Mumbai – 31.
- **Textile Trends**
Eastland Publications Pvt. Ltd., 44, Chittaranjan Avenue, Calcutta – 700012.
- **Textile Industry and Trade Journal**
Comput Media Services, Ambica Niwas Sayajiganj, Baroda – 390005
112-A, Oshiwara Industrial Centre, 1st Floor, Link Road, Goregaon (W), Mumbai – 400104.
- **Apparel International**
Apparel International Publishing, The White House, 60 Higher Street, Potters Bar, Herts En65AB, England.
- **Colourage**
Color Publication (P) Ltd., Post Box No. 9113, 126-A, Dhuruwadi A.V., Nagwekar Marg, Prabhadevi, Mumbai – 400025.
- **Hosiery Journal**
The Journal's Publications, Near Shingaar Cinema, Samrala Road, Ludhiana – 141008.
- **The Textile Magazine**
Gopali & Co., 407-408, Mount Road, Nandanam, Madras – 600035.
- **The Indian Textile Journal**
Business Press Pvt. Ltd., Transmission House, Mora co-Op. Industrial Estate, Mathuradas Vassanji Road, Andheri (E), Mumbai – 59.
- **Textile India Progress**
Asheerwad, 3/39, Sion Estate, Mumbai – 22 .
- **Clothes Line**
Clothline Media Pvt. Ltd., 7-B, Shah Industrial Estate, Veena Desai Road, Azad Nagar, Andheri (W), Mumbai – 53 .
C-27, Panchsheel Enclave, Second Floor, New Delhi – 17.
- **Indian Journal of Fibre and Textile Research**
National Institute of Science, Communication, CAIR, Dr. K.S. Krishnan Marg, New Delhi – 12.
- **Indian Journal of Textile and Research**

Publication and Information Directorate, CSIR, Hillside Road, New Delhi – 12.

- **Society of Dyers and Colourists**
P.O. Box 244, Perkin House, 82, Grattan Road, Bradford, BD12JB, U.K.
- **American Dyestuff Reporter**
SAF International Publications, Inc., Promenade A Suite 2, Harmon Cove Towers, Secaucus, NJ 07094, USA.
- **ARS Textrina** (A Journal of Textiles and Costumes)
Charles Babbage Research Centre, P.O. Box 47, Humboldt MN, USA, 56731
P.O. Box 272, St. Norbert Postal Station, Winnipeg, Manitoba, Canada, 3VIL6.
- **New Cloth Market**
Indian Industrial and Management Services, 46, 'White House', Panchwati, C.G. Road, Ahmedabad – 380006.
- **Natural Product Radiance**
Periodicals Division, National Institute of Science, Communication and Information Resources, Dr. K.S. Krishnan Marg, New Delhi – 12.

e-Resources

- <http://www.lib.ncsu.edu/news/textiles.php?p=513&more=1&c=1&tb=1&pb=1>Textiles
- <http://jit.sagepub.com/tips/cross.dtl>
- http://catalog.lib.ncsu.edu/web2/tramp2.exe/do_ccl_search/guest?setting_key=files&*search_button=keyword&servers=1home&index=default&query=AQZ-4405
- ctr.sagepub.com/s-clothing nad textile research journal
- www.sagepub.com/journalsIndex.nav -
- www.itaaonline.org/template.asp?intPageId=119 - 102k - Cached
- jurnalhukum.blogspot.com/.../akses-gratis-terbatas-sage-journal.html - 61k – Cached
- [search.barnesandnoble.com/Medieval-Clothing-and-Textiles/...](http://search.barnesandnoble.com/Medieval-Clothing-and-Textiles/)
- product.half.ebay.com/_W0QQprZ1432447
- www.amazon.com/Textiles-Colonial-Clothing-Sally-Queen/dp/0965819744 - 212k - Cached
- www.librarything.com/tag/clothing - Cached
- www.interweave.com/needle/piecework_magazine/files/PW_Notions_1-05.pdf
- en.wikipedia.org/wiki/History_of_clothing_and_textiles - 99k – Cached
- www.lib.ua.edu/libraries/gorgas/subguides/cloapptex.htm - Cached
- www.florilegium.org/files/CLOTHING/clothing-books-msg.html - 433k - Cached
- www.teonline.com/papers/books-textile-services.html - Cached
- ctr.sagepub.com/cgi/reprint/24/4/316.pdf
- search-desc.ebay.com/search/search.dll?...&sortorder=2
- www.florilegium.org/files/CLOTHING/clothing-FAQ.html - 63k - Cached
- amazon.com/Vintage-Clothing-1880-1980-Identification-Value/dp/... - 220k – Cached
- www.teonline.com/papers/books-trims-closures.html - Cached
- target.com/gp/search?ie=UTF8&index=books&field-keywords=clothing+... - 228k – Cached
- www.beaglebay.com/historical_clothing.htm - 287k - Cached
- www.textilemuseum.org/PDFs/Worldwidetextilecollections.pdf
- www.ebooks.com/ebooks/book_display.asp?IID=269362

- <http://www.tx.ncsu.edu:8190/jtatm/index.html>

Suggested Broad Topics for Master's and Doctoral Research

- Quality improvement of under-utilized protein and cellulosic fibres by enzyme treatment
- Effect of enzymatic treatment on vegetable dyes
- Analysis of properties of fabrics dyed with dyes extracted from medicinal plants
- Blending of under-utilized fibres with major fibres for quality analysis
- Designing of protective and functional clothing for farm workers and industrial workers
- Diversification of utilization of jute and under utilized fibres
- Development of suitable sports wears
- Development of paper patterns for designs to be developed for persons engaged in different occupations
- Product diversification using minor fibers

HOME SCIENCE EXTENSION & COMMUNICATION MANAGEMENT
Course Structure - at a Glance

CODE	COURSE TITLE	CREDITS
HECM 501*	GLOBAL EXTENSION SYSTEMS	3+0
HECM 502*	TRAINING AND HUMAN RESOURCE DEVELOPMENT	1+2
HECM 503*	COMMUNICATION FOR DEVELOPMENT	1+2
HECM 504*	MEDIA PRODUCTION AND MANAGEMENT	1+2
HECM 505	PARTICIPATORY PROGRAMME MANAGEMENT	1+2
HECM 506	GENDER SENSITIZATION FOR EMPOWERMENT	2+0
HECM 507	EXTENSION MANAGEMENT	2+0
HECM 508	CORPORATE COMMUNICATION AND EVENT MANAGEMENT	1+2
HECM 509	SCIENTIFIC WRITING AND REPORTING FOR MEDIA	1+2
HECM 510	EDUCATIONAL TECHNOLOGY	2+1
HECM 511	ICT AND NEW MEDIA	0+2
HECM 591	MASTER'S SEMINAR	1+0
HECM 599	MASTER'S RESEARCH	20
HECM 601**	RECENT TRENDS IN EXTENSION AND COMMUNICATION	3+0
HECM 602**	MANAGERIAL SKILLS FOR EXTENSION PROFESSIONALS	2+1
HECM 603**	ADVANCED MEDIA MANAGEMENT	2+1
HECM 604	SUSTAINABLE LIVELIHOOD SYSTEMS	2+0
HECM 605	PROJECT MANAGEMENT	1+1
HECM 606	MONITORING, EVALUATION AND IMPACT ASSESSMENT	2+1
HECM 607	ADVERTISING AND MARKETING COMMUNICATION	1+1
HECM 608	DYNAMICS OF GROUP BEHAVIOUR	2+0
HECM 691	DOCTORAL SEMINAR I	1+0
HECM 692	DOCTORAL SEMINAR II	1+0
HECM 699	DOCTORAL RESEARCH	45

* Compulsory for Master's programme; ** Compulsory for Doctoral programme

HOME SCIENCE EXTENSION & COMMUNICATION MANAGEMENT

Course Contents

HECM 501 GLOBAL EXTENSION SYSTEMS 3+0

Objective

To appraise students about historical perspectives of extension education in India and comparative extension system of selected countries.

Theory

UNIT I

Extension systems in India; Extension efforts after independence - Community Development Programme – Genesis and critical appraisal; Panchayati Raj Institutions; Area and target oriented programme – IAAP, T & V; Special programmes for poor, women and children - IRDP, TRYSEM, DWCRA; JRY, IAY, SGSY.

UNIT II

Extension Approaches to rural development; Adult literacy programme - Need, Importance and Objective, 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, NATP, IVLP, ATIC, NAIP, AICRP.

UNIT III

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.

UNIT IV

Comparative extension system of selected developed and developing countries: USA, UK, Israel, China, Pakistan, Japan and Brazil with brief history, approaches, organizational structure, linkage with research and extension methods used; its comparative analysis with Indian extension system.

Suggested Readings

- Axinn George H & Thorat SS. 1972. *Modernizing Agricultural World Wide*. Oxford & IBH.
- Cernea MM, Russel JFA & Coulter JK. (Eds.). 1983. *Agricultural Extension by Training and Visit- The Asian Experience*. The World Bank Washington D.C.
- Cernea MM, Russel JFA & Coulter JK. (Eds.). 1983. *Agricultural Extension by Training and Visit- The Asian Experience*. The World Bank Washington D.C.
- Dantwala ML & Barmeda JN. 1990. *Rural Development Approaches and Issues, Indian Ag. Dev. Since Independence*. Oxford & IBH.
- Dantwala ML & Barmeda JN. 1990. *Rural Development Approaches and Issues, Indian Ag. Dev. Since Independence*. Oxford & IBH.
- Dhama OP & Bhatnagar OP. 1991. *Communication for Development*. Oxford & IBH.
- Mondal S & Ray GL. 2007 *A Text Book of Rural Development*. Kalyani.
- Ray GL. 2006. *Extension Communication and Management*. Kalyani.
- Rivera WH. 1987. *Agricultural Extension World Wide Issues, Practices and Emerging Pririties*. Croom Helm.

- Rivera WH. 1987. *Agricultural Extension World Wide Issues, Practices and Emerging Pririties*. Croom Helm.
- Singh H. 1985. *Rural Development in India*. Print Well Publ.
- Singh H. 1985. *Rural Development in India*. Print Well Publ.
- Singh RP, Mathur PN & Kumar GAK. 1999. *Extension Education - A Handbook for Extension Personnel*. IFWA, IARI, New Delhi.
- Swanson BE, Bants RP & Sofrenko AJ. 1984. *Improving Agriculture Extension - A Reference Manual*. FAO.
- Vanden Ban AW & Hawkins HS. 1988. *Agriculture Extension*. Longman Scientific Technicals.

HECM 502 TRAINING AND HUMAN RESOURCE DEVELOPMENT 1+2

Objective

To acquire knowledge and skill on various aspects of trainings, human resource development and develop expertise as training professionals.

Theory

UNIT I

Training – concept and importance in Human Resource Development (HRD) and rural development; types of training; conceptual models of training process.

UNIT II

Participatory training methods - lecturette , interactive demonstration, brain storming, case studies, syndicate method, simulation exercises, role –play, business game, in-basket exercise; sensitivity training, T-group, transactional analysis and fish bowl exercise.

UNIT III

Experiential Learning Cycle (ELC)- concept and types; designing, management and delivery of training programme; monitoring, evaluation and impact assessment.

UNIT IV

Human resource – concepts, importance and types; HRD- concept, dimensions and importance in rural development; strategic interventions; HRD policies of Government, ICAR and NGOs; facilitators of HRD- motivations, stress management; techniques of HRD.

Practical

Visiting and studying the nature and functioning of training institute; practice of selected training methods, planning, organizing and evaluation of training programmes for different clientele.

Suggested Readings

- Lynton R. & Pareek U. 1991. *Training Development*. Vistat.
- Singh RP. 2000 *Management of Training Programmes*. Anmol Publ.

HECM 503 COMMUNICATION FOR DEVELOPMENT 1+2

Objective

To acquaint students about communication process, recent advances in communication and diffusion and help students acquire necessary communication skills.

Theory

UNIT I

Communication- concept, meaning, importance, models, theories and types; communication approaches- individual, group and mass, factors affecting their selection and use; communication fidelity, credibility, empathy, feedback and factors affecting communication process; barriers in communication.

UNIT II

Communication skills; Role of ICT in communication, soft skills; effective oral communication, public speaking; non-verbal communication, writing skills; soft skills; role of ICT in communication.

UNIT III

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.

UNIT IV

Concept and element of diffusion; concept and stages of Innovation – decision process, attributes and consequences of Innovations; adopter categories and innovativeness.

Practical

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

Suggested Readings

- Bhagat R. & Mathur PN. 1989. *Mass Media and Farm Women*. Intellectual Publ. House.
- Chopra K, Kaukodi GK & Murthy MN. 1990. *Participatory Development*. Sage Publ.
Deep & Deep Publ.
- Hage Jerald 1977. *Communication and Organizational Control*. Wiley Interscience.
- Melkote SR. 1991. *Communication for Development in the Third World: Theory and Practices*. Sage Publ.
- Mody B. 1991. *Designing Message for Development Communication*. Sage Publ.
- Punam Linda L & Pacanowsky Micheal E. 1983. *Communication and Organizations: An Interpretive Approach*. Sage Publ.
- Ratnaswamy P. 1995. *Communication Management - Theory and Practice*.
- Ray GL. 1991. *Extension and Communication and Management*. Naya Prakashan.
- White Shirley A, Nair KS & Ascroft J. 1994. *Participatory Communication*. Sage Publ.

HECM 504

MEDIA PRODUCTION AND MANAGEMENT

1+2

Objective

To develop competency in production and management of different media.

Theory

UNIT I

Production technology, process and skills; process of producing newspaper, magazine and other printed literature (leaflets, brochures, newsletters, bulletins, booklets, posters etc.).

UNIT II

Concept of media and role in changing communication scenario; multi-media – concept and evolution of multimedia; fundamentals of making a multi media programme-text; graphics, audio, etc; process of producing radio, television and multi media programmes; different programme formats for radio and television; hardware and gadgetry requirements; use of radio, television, and multimedia in extension; planning and production of selected media products-print and electronic.

UNIT III

Paper-kinds of paper, sizes; colour theory for print and multi media; software for production-basics of photoshop, pagemaker, coral draw, quarkxpress; use of graphics, illustrations and diagrams in production; animation.

UNIT IV

Ownership patterns of various media; economics of media organizations; organizational structures; different departments; production planning; lay out consideration; marketing planning; registration; 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; Planning and production of selected media products – print and electronic; Study of one multimedia enterprise in detail; Preparing a project proposal for submitting to a funding agency.

Suggested Readings

- Akhauri MMP. 1990 *Entrepreneurship for Women in India*. NIESBUD, New Dehli.
- Gupta CB & Srinivasan NP. 2000. *Entrepreneurship Development in India*. Sultan Chand & Sons
- Hisrich RD & Brush CG. 1986. *The Women Entrepreneurs*. D.C. Health & Co.
- Meredith GG. 1982. *Practice of Entrepreneurship*. ILO.
- Singh N. 2003 *Effective Entrepreneurship Management*. Anmol Publ
- Verma S. 2004. *Entrepreneurship and Effective Marketing*. Aavishkar Publ.

HECM 505

PARTICIPATORY PROGRAMME MANAGEMENT 1+2

Objective

To develop understanding regarding the principles, procedure and approaches of extension programme planning, implementation, evaluation of extension programme and participatory management techniques.

Theory

UNIT I

Conceptual framework of extension programme planning – key concepts and importance in planned change.

UNIT II

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.

UNIT III

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.

UNIT IV

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; organize and evaluate programmes related to women and children at village level.

Suggested Readings

- Adhikary MM. 2006. *Participatory Planning & Project Management in Extension Sciences*. Agrotech Publ. Academy.
- Basu. D. 2006. *Participatory Monitoring & Evaluation of Development programmes: Prationer’s Guide*. Agrotech Publ. Academy.
- Dhama OP & Bhatnagar OP. 1991. *Communication for Development*. Oxford & IBH.
- Dhama OP. 1986 *Extension and Rural Welfare*. Ram Prasad & Sons.
- Mukherjee N. 1994. *Participatory Rural Appraisal - Methodology and Application*. Concept Publ. Co.
- Ray GL. 1991. *Extension Communication and Management*. Naya Prokash.
- Sandhu AS. 1994. *Extension Programme Planning*. Oxford & IBH.
- Singh R. 1987. *A Text Book of Extension Education*. Sahitya Kala Prakashan.

HECM 506

GENDER SENSITIZATION FOR EMPOWERMENT 2+0

Objective

To sensitize students about various dimensions of gender and development, legal rights and using gender tools and methodologies.

Theory

UNIT I

Gender and empowerment: meaning, gender related definitions and importance for empowering women; need and focus on gender sensitization - gender in community diversity and its implication for empowerment.

UNIT II

Gender perspectives in development of women, social characteristics, roles, responsibilities, resources, constraints, legal issues and opportunities; economical, educational and other parameters.

UNIT III

Gender tools and methodologies: Dimensions and methodologies for empowerment; gender budgeting; gender analysis framework- context, activities, resources and programme action profile; technologies and empowerment - gender specific technologies, household technology interface, socio-cultural interface and women as consumer of technologies.

UNIT IV

Gender issues and development: health and nutrition, violence, governance, education and media.

Suggested Readings

- Cockburn C & Ormrod S. 1993. *Gender and Technology in the Making*. Sage Publ.
- Grover I. 2006. *Introducing Gender*. Manual, Department of Home Science Extension Education, COHS, CCS HAU, Hisar.
- Grover I. 2006. *Unpacking Gender and Feminism*. Manual, Department of Home Science Extension Education, COHS, CCS HAU, Hisar.
- Grover I., Kaushik S & Khetarpaul N. 2006. *Gender Health and Nutrition*. Manual, Department of Home Science Extension Education, COHS, CCS HAU, Hisar.
- Kaushik S. 2006. *Gender & Education*. Manual, Department of Home Science Extension Education, COHS, CCS HAU, Hisar.
- Krishanraj M & Chanani K. 1989. *Gender and the Household Domain - Social and Cultural Dimension*. Sage Publ.
- Me Neil Maureen (Ed.). 1989. *Gender and Expertise*. Free Association Books.
- Mehta S. 2006. *Gender and Media*. Manual, Department of Home Science Extension Education, COHS, CCS HAU, Hisar.
- Oxfam 1994. *Gender Training Manual*. Oxfam.
- Rani S. 2006. *Gender and Work*. Manual, Department of Home Science Extension Education, COHS, CCS HAU, Hisar.
- Rose K. 1992. *Where Women are Leaders -The SEWA Movement in India*. Vistaar Publ.
- Shiva V. 1989. *Staying Alive - Women, Ecology and Development*. Zed Books.
- Yadav L. 2006. *Gender and Governance*. Manual, Department of Home Science Extension Education, COHS, CCS HAU, Hisar.

HECM 507

EXTENSION MANAGEMENT

2+0

Objective

To familiarize students with basic concept, importance, elements, functions and principles of extension management and to sensitize them about problems and issues of extension management and appraisal of management of various extension organizations.

Theory

UNIT I

Concept of administration and management; principles and theories of administration and management, schools of management thoughts; meaning, nature and scope of extension management; scientific management movement.

UNIT II

Process of management; Planning, Organizing, Staffing- meaning definition of staffing, Directing, Communicating, co-ordination, controlling, monitoring and evaluation .

UNIT III

Organizational climate, behaviour, development; Management by Objective (MBO).

UNIT IV

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.

Suggested Readings

Ahuja KK. 1983. *Personnel Management*. Kalyani.

Dhama.OP & Bhatnagar OP. 1991. *Education and Communication for Development*. Oxford & IBH.

Grover I. 2002. *Extension Management*. Agrotech Publ.

Ray GL. 2006. *Extension Communication and Management*. Kalyani.

Tripathi PC & Reddy RN. 1983. *Principles of Management*. Tata McGraw Publ.

HECM 508

CORPORATE COMMUNICATION & EVENT MANAGEMENT

1+2

Objective

To develop understanding about concept, goals and strategies of corporate communication, public relation and event management and also develop skill in planning and managing an event.

Theory

UNIT I

Corporate communication – concept& importance with special reference to Indian Electronic Media context; Identification and understanding corporate goals; corporate policy, strategy and corporate niche, branding; corporate planning, implementation and evaluation.

UNIT II

Corporate public relations-community, customer, investors, media relations; communication campaigns, managing corporate crises, change management conflict and communication, communication audit, managing diversity, issues management; new media and corporate communication.

UNIT III

Strategic communication support during mergers/acquisitions, litigations; corporate social responsibility, monitoring blogs for PR activity, environmental analysis; rural public relations; social marketing.

UNIT IV

Event management – concept, objective, need, types and structures of event; priority of event management; process of organizing and event; effective use of resources in context to vision, mission and roles; effective goal planning strategies; planning events- press meets/conferences/exhibitions, organizing media tours; evaluating public opinion.

Practical

Visit to different corporate organizations related to media, organizing discussion with corporate personnel; planning and organizing an event for effective communication with corporate sector.

Suggested Readings

- Chopra K, Kaukodi GK & Murthy MN. 1990. *Participatory Development*. Sage Publ.
- Dwivedi RS.1982. *Management of Human Resources: A Behavioural Approach to Personnel*. Oxford & IBH.
- Hage Jerald 1977. *Communication and Organizational Control*. Wiley Interscience.
- Hellriegel Don, Slocum John W & Woodman, Richard W. 1992. *Organizational Behavior*. 6th Ed. West Publ. Co.
- Melkote SR. 1991. *Communication for Development in the Third World: Theory and Practices*. Sage Publ.
- Mody B. 1991. *Designing Message for Development Communication*. Sage Publ.
- Pareek U & Rao T Venkateswara 1981. *Designing and Managing Human Resource System*. Oxford & IBH.
- Punam Linda L & Pacanowsky Micheal E. 1983. *Communication and Organizations: An Interpretive Approach*. Sage Publ.
- Ratnaswamy P. 1995. *Communication Management - Theory and Practice*. Deep & Deep Publ.
- Wertger William B & Keith Davis 1982. *Personnal Management and Human Resources*. McGraw Hill.
- White Shirley A, Nair KS & Ascroft J. 1994. *Participatory Communication*. Sage Publ.

HECM 509 SCIENTIFIC WRITING AND REPORTING FOR MEDIA 1+2

Objective

To acquaint and develop writing and reporting skills among students about science and Technology in various formats for different clientele to media.

Theory

UNIT I

Concept and various formats of scientific communication, need and importance of scientific communication in changing communication scenario.

UNIT II

Concept of reporting, types of reporting, reporting skills; Reporting -Field reporting, coverage of Science and Technology events (conference /speeches / seminars and conventions / exhibitions / natural phenomena etc.); Role & responsibilities of a reporter, classification and qualities of a reporter; techniques of reporting.

UNIT III

Writing: Writing for special target groups like – children, women, farmers and rural folks. Writing in various format for newspaper, science columns, magazines and books.

UNIT IV

Editing: Its principles and process, proof reading, editing of articles, stories and newspaper etc.

Practical

Field reporting, coverage of Science and Technology events –conference, speeches, seminars, conventions, exhibitions, natural phenomena, Writing for different clientele, editing. Compulsory Industrial Training for Extension Students.

Suggested Readings

D'Souza YK. 2000. *Encyclopedia of Advanced Journalism*. Vols. I-III. Anmol Publ.
Ravindran RK. 1999. *Hand Book of Reporting and Editing*. Anmol Publ.

HECM 510

EDUCATIONAL TECHNOLOGY

2+1

Objective

To develop ability among students in handling of different educational technologies and build competency as a teacher and public speaker.

Theory

UNIT I

Teaching learning process: meaning and characteristics of teaching and learning; teaching learning process, maxims of teaching which facilitate teaching learning process, stages, forms and levels of teaching and learning. Motivation- concept, importance and techniques.

UNIT II

Meaning and scope of educational technology; curriculum design and development; lesson planning: concept and methodology; teaching learning strategies: microteaching, programmed instruction, simulation role-play, team teaching, experiential learning, traditional media, ICT, video 'production and multimedia presentations etc.

UNIT III

Genesis and trends in modern education; management of formal and non formal education in India; vocationalization of education; distance education; guidance and counseling.

UNIT IV

Evaluation of instructions effectiveness: competence based question paper; reliability and validity of question papers.

Practical

Designing a course curriculum, preparation of lesson plans of selected topics; preparation and use of different instructional material; conducting selected, teaching lessons; exercises on teaching learning strategies; reading and speech exercises; construction of competency based question paper and seminar organization.

Suggested Readings

Kemp Jerrold E. 1985. *Planning and Producing Audio Visual Materials*. Harper & Row.
Kochhar SK. 1985. *Methods and Techniques of Teaching*. Sterling Publ.

- Kulkarni SS. 1986. *Introduction to Educational Technology*. Oxford & IBH.
- Robert Heinich 1990. *Instructional Media*. MacMillan.
- Vedanayagam EG. 1988. *Teaching Technology for College Teachers*. Sterling Publ.

HECM 511 ICT AND NEW MEDIA 0+2

Objective

To familiarize students with the ICT and new media technologies and provide hands on training.

Practical

Multi media and emerging technologies. Video-on demand, internet radio and web television, impact of new media on traditional media. Writing for general interest 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, interative, web animation, animated graphics, designing interactive elements, sound addition, web visual editor, creation and editing.

Suggested Readings

- Robert Reinhard & Snow Dowd 2004. *Macromedia Flash Mx 2004 Bible*. Wiley.
- Tay Vaghan 2002. *Multimedia- Making it Work*. 5th Ed. Tata McGraw-Hill.

HECM 601 RECENT TRENDS IN EXTENSION AND COMMUNICATION 3+0

Objective

To develop understanding about concept, approaches, models and theories of extension and recent advances in communication.

Theory

UNIT I

Changing concepts and emerging issues in extension – Rational and realities; recent Extension strategies for rural upliftment; future scenario of extension.

UNIT II

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.

UNIT III

Emerging issues in communication- understanding communication in global perspective; Role of Mass Media for rural audience with special emphasis on women.

UNIT IV

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, advantage, limitations, application in Home Science.

Suggested Readings

- Grover I, Sethi N & Grover D. 2004. *Handbook of Communication and Media*. Agro-tech Publ. Academy.
Gupta VS. 2005. *International Communication*. Concept Publ.
Rao VM. 2007. *E-Governance*. ABD Publ.
Wadia A. 1999. *Communication and Media*. Kanishka Publ.

HECM 602

MANAGERIAL SKILLS FOR EXTENSION PROFESSIONALS

3+0

Objective

To develop expertise on management problems of extension organizations and learn techniques of management in extension organizations.

Theory

UNIT I

Conceptualization of management process and its major functions; Management problems in extension organizations; Managerial skill - Nature and importance for extension professionals; Skills in effective management of extension and rural development organizations.

UNIT II

Strategic planning: importance, steps and techniques involved; Management by objective as applicable to extension organizations; Techniques of Transactional Analysis for improving interpersonal communication.

UNIT III

Creative problem solving techniques; Stress management practices; Total Quality Management (TQM); Concept of learning organization to improve extension services at various levels; Time management practices; Development of Management Information System for extension organization at various levels.

UNIT IV

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, concretisation and empowerment of rural people.

Suggested Readings

- Jan Servaes, Thomas L Lacobson 1996. Shirley A White (Ed.). *Participatory Communication for Social Change*. Sage Publ.
Leon C Megginson, Donald C Hosely & Paul H Pietri Jr. 1989. *Management Concepts and Applications*. 3rd Ed. Harper & Row.
Michel Le Boeuf (Ed.). 2001. *Essence of time Management*. Jaico Publ. House.
Narayan B. 1999. *Project Management*. APH Publ.
Srinivasan R & Chunawalla SA. 1995. *Management Principles & Practice*. 4th Ed. Himalaya Publ. House.
Stemphen P Robbins 1989. *Training in Inter Personal Skills: Tips for Managing People at Work*. Prentice Hall.
Tripathi PC & Reddy PN. 1995. *Principles of Management*. 2nd Ed. Tata McGraw Hill.

HECM 603

ADVANCED MEDIA MANAGEMENT

2+1

Objective

To strengthen the capabilities in media planning and production.

Theory

UNIT I

Principles of management; managing the media organization; managerial functions in the media organization; introduction to media organization.

UNIT II

Editorial and circulation management- Need and importance; marketing-concept and circulation, affecting factors, circulation manager, function of circulation department, difficulties in circulation, promoting circulation.

UNIT III

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.

UNIT IV

Significant issues in the management of broadcast media; organisational structure of radio and television in public and private sectors; Functions of various departments and personnel-production, marketing, financial, managing the station/ channel.

Practical

Visit to print, electronic and new media organisations to understand the designing, media development, organisational management, functions, problems etc.

Suggested Readings

Bhagat R & Mathur PN. 1989. *Mass Media and Farm Women*. Intellectual Publ. House.

Kemp JE. 1975. *Planning and Producing Audio Visual Material*. 3rd Ed. Thomas Y. Growell.

Melkote SR. 1991. *Communication for Development in the Third World: Theory and Practices*. Sage Publ.

Mody B. 1991. *Designing Message for Development Communication*. Sage Publ.

Ray GL. 1991. *Extension and Communication and Management*. Naya Prakashan.

HECM 604

SUSTAINABLE LIVELIHOOD SYSTEMS

2+0

Objective

To develop understanding about resources and livelihood systems, dimensions of sustainable development for livelihood security of rural people.

Theory

UNIT I

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;

UNIT II

The production systems – agriculture, horticulture, sericulture, forestry, animal husbandry and dairying fisheries, non-farm activities, their linkage with the livelihoods of rural people; food security, livelihood security.

UNIT III

Sustainable development concept and challenges; ecological, social and economic dimensions of sustainable development; peoples participation and sustainability, indicators of environmental sustainability; sustainable livelihoods; quality of life.

Suggested Readings

Chandela MC. 2004. *Environmental Protection & Development*. Aavishkar Publ.

Dayananadan R. 2005. *Sustainable Development Opportunities and Challenges*. Serials Publ.

Vyas PR & Somani LL. (Eds.). 1996. *Ecological Crises and Environmental Protection (With Special Reference to Agriculture)*. Agrotech Publ.

HECM 605

PROJECT MANAGEMENT

1+1

Objective

To understand concept importance and strategies of project management and develop skill in planning a project proposal for funding agencies.

Theory

UNIT I

Project management – Concept, process and types; functions of project manager; project life cycle; project appraisal, feasibility analysis, techno-economic analysis, project design and network analysis, input analysis, financial analysis, social cost benefit analysis; project appraisal;

UNIT II

Project planning – criteria for selecting project, planning proposal, project review techniques, project estimation, managerial and other problems related to projects;

UNIT III

Data management, factors influencing efficiency of a project; monitoring and control of a project. evaluation and reporting results.

UNIT IV

Thrust areas of Home Science research; sources and priorities of funding agencies for Home Science research; National and International funding agencies for project, research application of Home Science in industry.

Practical

Identifying researchable issues in H.Sc. 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.

Suggested Readings

Bajpai SR.1969. *Methods of Social Survey and Research*. Kitab Ghar.

Best W. 1983. *Research in Education*. 4th Ed. Prentice Hall of India.

Carter Good V. 1966. *Essential of Educational Research*. Appleton Century Profits, Educational Division, Mereelith Corporation, New Delhi.

Kaul Lokesh 1984. *Methodology of Educational Research*. Vikas Publ.

Kerlinger F. 1973. *Foundations of Behavioural Research*. Rinehart Winetons.

HECM 606 MONITORING EVALUATION AND IMPACT 3+0
ASSESSMENT

Objective

To help students to acquire knowledge, skill, appreciation in monitoring, evaluation and impact assessment.

Theory

UNIT I

Monitoring: meaning and theoretical concepts; components of project monitoring; performance appraisal standards and sustainability; approaches to participatory impact monitoring; implementation of monitoring; usefulness of monitoring-projects/reports.

UNIT II

Evaluation: meaning and theoretical concepts; criteria, steps and standards of evaluation; using models to focus evaluation; planning evaluation process; design of evaluation studies; methods of data collection.

UNIT III

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, other issues, trends and course evaluation.

UNIT IV

Impact assessment techniques: concepts and process; domains of impacts; levels of impact assessment; approaches in development programme; 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.

Suggested Readings

- Andrews Cochin Mac & Sien, Chia Un (Ed.). 1986. *Too Rapid Rural Development: Perceptions and Perspectives from South East Asia*. Ohio Univ. Press.
- Bhattacharya Sid Nath 1983. *Rural Development in India and Other Developing Countries*. Parashar Printers.
- Chaturvedi HR & Mitra SK 1986. *Citizen Participation in Rural Development*. Oxford & IBH.
- Desai DK. 1983. *Management in Rural Development*. Oxford & IBH.
- Jain SC. 1985. *Rural Development Institutions and Strategies*. Rawat Publ.
- Long N. 1976. *Introduction to the Sociology of Rural Development*. ELBS & Javistock Publ.
- Mathew T. 1984. *Rural Development in India*. Agri-Sole Publ. Academy.
- Mehra Rekha & Saradmoni K. 1983. *Women and Rural Transformation*. Concept Publ.
- Mehta SR. 1972. *Emerging Pattern of Rural Development*. Wiley Eastern.
- Panchanadikar KC & Panchandaikar Z. 1985. *Rural Modernisation in India (A Study in Developmental Infrastructure)*. Popular Prakashan.
- Papola TS. 1982. *Rural Industrialisation (Approaches and potential)*. Himalaya Publ. House.

- Quaraishi MA.1985. *Indian Agriculture and Rural Development*. BR. Publ. Corp.
- Seetharamu AS. 1980. *Education and Rural Development*. Ashish Publ. House.
- Shabbir Cheema C. 1985. *Rural Development in Asia*. Sterling Publ.
- Shah SA. 1977. *Rural Development Planning and Reforms*. Abhish Publ.
- Swaminathan MS.1982. *Science and Integrated Rural Development*. Concept Publ.
- Tiwari J. 1984. *Rural Development Administration: Perspectives and Prospects*. Chugh Publ.
- Vivakananda M. 1980. *Planning Unit Areas for Integrated Rural*. Ashish Publ. House.

HECM 607 ADVERTISING AND MARKETING COMMUNICATION 1+1

Objective

To help the students to know the concept,evaluation, history, classification, various media for advertising, socio-economic effects of advertising, trends in advertising and marketing, govt. policy on advertising and marketing and to develop competency in creating advertisements for mass communication.

Theory

UNIT I

Evaluation and history of advertising, relevance of advertising in marketing, an overview of the advertising scene in India.

UNIT II

Classification of advertising; various media for advertising, advertising writing process; law and ethics in advertising, socio-economic effects of advertising.

UNIT III

Advertising agency, operations/management , an understanding of key issues, strategies in advertising, govt. policy on advertising and management, apex bodies in advertising.

UNIT IV

Advertising as a tool of marketing and 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, wall paintings, case studies on institutional advertisement, advertisement campaign.

References

- Chunawala SA 2003. *Advertising an Introductory Text*. Himalaya Publ. House.
- Derek Townsend 1993. *Advertising and Public Relations*. Alvin Rednam.
- Ganesh S. 2005. *Introduction to Advertising*. Radha Publ.
- Thomas CO Grim, Allen CT & Richard J Semenik 2003. *Advertising and Integrated Brand Promotion*. Vikas Publ.
- Verma S. 2004. *Entrepreneurship and Effective Marketing*, Aavishkar Publ.

Objective

To develop understanding about group behavior and dynamics for effective communication and group management

TheoryUNIT I

Meaning, characteristics, types and functions of groups; Stages and process of group formation; group norms and structure.

UNIT II

Understanding individual, interpersonal and human behaviour and its different dimensions; recognising points of view; feeling, perception and assumptions that intervene in inter-personal interactions.

UNIT III

Group dynamics: cooperation, competition, communication, group pressure, group cohesiveness, leadership etc.

UNIT IV

Managing group: team building, conflict management, stress management, active listening and feedback, achieving cooperative group structure.

Suggested Readings

- Gbosh A. 2006. *Communication Technology and Human Development*. Sage Publ.
- Hellriegel Don, Slocum John W & Woodmqn Richard W. 1992. *Organizational Behavior*. 6th Ed. West Publ.. Co.
- Melkote SR. 1991. *Communication for Development in the Third World: Theory and Practices*. Sage Publ.
- Ratnaswamy P. 1995. *Communication Management - Theory and Practice*. Deep & Deep Publ.
- Roy GL. 1991. *Extension and Communication and Management*. Naya Prokash.

HOME SCIENCE EXTENSION & COMMUNICATION MANAGEMENT

List of Journals

- **Indian Journal of Adult Education**
 - Indian Adult Education Association, New Delhi
- **Indian Journal of Home Science**
 - Home Science Association of India, Baroda
- **Indian Journal of Social Work**
 - Tata Institute of Social Science, Deonar, Bombay
- **Indian Journal of Training and Development**
 - Indian Society for Training and Development, New Delhi.
- **Journal of Indian Education**
 - NCERT, New Delhi
- **Journal of Rural Development**
 - National Institute of Rural Development, Rajendranagar, Hyderabad
- **Rural India**
 - Adarsh Seva Sangh, Ishwardas Mansions, Nana Chowk, Bombay, Maharashtra
- **Social Welfare**
 - Central Social Welfare Board, New Delhi
- **Indian Journal of Social Sciences**
 - Academic & Law Series, New Delhi.
- **International Journal of Home Science**
 - Academic & Law Series, New Delhi
- **Journal of Home Science Dairy & Food Science**
 - Agricultural Research and Communication Centre, Karnal, Haryana
- **Journal of Communication Studies**
 - NCDC, Banaras Hindu University, Varanasi
- **Communicator**
 - IIMC, New Delhi
- **Vidura**
 - Press Trust of India, New Delhi
- **Studies on Home and Community Studies**
 - Kamla Raj Enterprise, New Delhi
- **Journal of Human Ecology**
 - Kamla Raj Enterprise, New Delhi
- **Journal of Social Science**
 - Kamla Raj Enterprise, New Delhi
- **Indian Journal of Extension Education**
 - Indian Society of Extension Education, Division of Agricultural Extension, IARI, New Delhi
- **Maharashtra Journal of Extension Education**
 - Maharashtra Society of Extension Education, Akola
- **Rajasthan Journal of Extension Education**
 - Rajasthan Society of Extension Education Udaipur.
- **Journal of Extension.**
 - Extension Building, 432 North Lake Street Madison, Wisconsin.

e-Resources

- <http://www.uwex.edu/ces/pdande>
- <http://www.extension.missouri.edu/staff/programdev/plm>
- <http://www.fao.org/DOCREP/ARTICLE/WFC/XII/0346-AL.htm>
- http://www.krishiworld.com/htm/agri_extension_edu1.html
- <http://www.uasd.edu/extension.htm>
- http://www.csrtimys.res.in/but_files/trg.php
- <http://www.vedamsbooks.com/no44211.htm>
- <http://www.flipkart.com/.../B-S-Hansara-K-Vijayarayanan/8180693210/6V23F9T020.html>
- <http://www.communicationskills.co.in/importance-of-communication-skills.htm>
- <http://www.managementparadise.com/forums/archive/index.php/f-18918.html>
- <http://www.hird.ap.nic.in/clic/list.html>
- <http://www.kar.nic.in/bellary/rdpr.html>
- <http://www.isu.edu/faculty/aclind/syllabus%204050fall%202001.htm>
- <http://www.npandia.org/hrd.htm>
- <http://www.firsthr.org>
- <http://www.rocw.raifoundation.org/management/mba/HRPD/lecture-notes/lecture-os>
- en.wikipedia.org/wiki/Corporate_communications
- www.televisionpoint.com/news2008/newsfullstory
- findarticles.com/p/articles/mi_hb3036/is_200210/ai_n7737881
- books.google.co.in/books?isbn
- [www.thebusinessedition.com/corporate-communication-strategy-in-the-new-media-corporate-blogs-394/ -](http://www.thebusinessedition.com/corporate-communication-strategy-in-the-new-media-corporate-blogs-394/)
- papers.ssrn.com/sol3/papers.cfm?abstract_id=873348
- www.pratapantony.com/corporate_communications.html
- www.primepointfoundation.org/
- www.academictutorials.com/corporate-communication
- www.thinkingmanagers.com/business-management/corporate-communication.php
- www.corporatecommunicationservices.com
- www.ebizq.net/to/VITRIAPCWEBINAR
- advice.cio.com/john_m_worthington/the_event_management_gap_the_importance_of_monitoring_intelligence_for
- www.thesportjournal.org/article/importance-expectations-participatory-sport-event-satisfaction
- www.psychwww.com/mtsite/smredimp.html
- www.webbuyersguide.com/resource/white-paper/655/Importance-of-Event-Management
- www.scmagazineus.com/Event-describes-importance-of-securing-Web-20/article/109537/
- advice.cio.com/john_m_worthington/the_event_management_gap_the_importance_of_monitoring_intelligence_for
- en.wikipedia.org/wiki/Communicationwww.mhca.org.au/Resources/CommunityDevelopment/documents/CDEPMod1-EffectiveCommunication_ParticipantGuide.pdf
- books.google.co.in/books?isbn

- www.skagitwatershed.org/~donclark/leader/leadcom.html
- www.hss.iitb.ac.in/courses/hs490/communication.ppt
- web.cba.neu.edu/~ewertheim/interper/commun.htm
- www.hodu.com/
- humanresources.about.com/od/interpersonalcommunication1/Effective_Interpersonal_Communication.htm –
- www.mywordpower.com/
- www.earthlingcommunication.com
- www.acceptedtraining.org/ - 7k –
- www.iimidr.ac.in/iimi/pages/institute/mdpdetail.php?tid=133 - 20k
- www.sfhelp.org/pop2/ecx.htm - 18k -
- www.i2lifefselfgrowth.com/communication/written-communication-skills-ppt.php - 21k -
- www.ortmap.org/newsletters/fondas-news-2004-apr-jun.pdf
- www.icar.org.in/aeac/curricula/mHSc-2001.pdf -
- www.caen.iufm.fr/colloque_iartem/pdf/pandey.pdf
- www.nscb.gov.ph/ncs/9thncs/papers/gender_Towards.pdf
- lsr.nellco.org/cgi/viewcontent.cgi?article=1006&context=cornell/biss
- www.misu.ait.ac.th/NewsAndEvents/newsletterData/iss3no4.pdf
- mitpressjournals.org/doi/pdf/10.1162/1054204041667703
- www.nscb.gov.ph/ncs/9thncs/papers/gender_Towards.pdf

Suggested Broad Topics for Master's and Doctoral Research

- Women empowerment
- Technology assessment, refinement and transfer
- Media development, standardization and effectiveness
- Communication and media studies
- Adoption and diffusion
- Gender perspectives
- Social marketing, advertising and public relation
- Evaluation and impact assessment
- Women in agriculture

SUPPORTING COURSES

M. Sc.

HSC 500 RESEARCH METHODS IN HOME SCIENCE 3+0

Objective

To understand the meaning and importance of research, research procedures and develop skills in designing and executing research.

Theory

Research – Meaning and Importance; Types of Research; Qualities of Researcher; Steps of Research; Selection and delineating of research problem, statement of general and specific Objective, formulation of assumptions and hypothesis, planning research design, selection and development of data collection tools, collection of data, analysis and interpretation of data, drawing conclusion, writing research report. Understanding some concepts in research; Assumption, delimitations, operational definition, Measurement and its levels, Variable and their types. Hypothesis – Meaning, importance, characteristics and ways of stating hypothesis. Review of literature – Importance, sources of literature, organizing review, collection and presentation. Research Design; Historical or documentary, Experimental, Ex-post-facto, Survey, Case study, Field studies. Sampling – Meaning and importance; Sampling techniques, determine size of sample. Techniques of data collection; Observation, interview and questionnaire, Projective technique. Scale and tests – Meaning and construction; validity and reliability of tools. Data analysis – tools and methods, interpretations of data, documentation and presentation. Summary, conclusion and recommendations; Writing abstract. The research report; Formal style of writing, chapterisation, heading, pagination, Tables and figures, Appendices and bibliography, acknowledgement. Writing for publications

Suggested Readings

Bajpai SR. 1966. *Methods of social Survey and Research*. Kitab Ghar.
Best W. 1983. *Research in Education*. 4th Ed. Prentice Hall of India.
Carter Good V. 1966. *Essential of Education Research*. Appleton Century Profits, Educational Division, Mereelith Corp.
Kaul Lokesh 1984. *Methodology of Education Research*. Vikas Publ.
Kerlinger F. 1973. *Foundations of Behavioural Research*. Rinehart Winetons.

STAT 500 STATISTICAL METHODS 2+1

Objective

To develop understanding among students about sampling and data analysis techniques, methods of data analysis using various statistics.

Theory

Probability and probability distribution: Various definitions of probability, Addition and multiplication laws of probability and simple problems based on them. Expectation of a random variable, Moments, Skewness and Kurtosis. Binomial and Poisson distribution, their fitting and simple problems based on them, Normal distribution, their properties and uses. Sampling: Sampling v/s Complete enumeration, Probability and non probability sampling, S.R.S. with and without replacement. Test of

significance: Hypothesis, null and Alternative hypothesis, type-I and type-II error, Level of significance, Critical region, one and two tailed tests, Procedure for testing of hypotheses. Standard Normal deviate test for single mean, difference of two means. Proportion, difference of proportion and confidence interval, students 't' test, for comparison involving one and two sample means, paired 't' test, Confidence interval, Chi-square test for goodness of fit and independence of two attributes (2x2 and r x s contingency table) and Yate's correction for continuity, Correlation and Regression : Simple and partial correlation coefficients, Linear and multiple regressions. Partial regression coefficients, multiple correlation coefficients and their tests of significance. Design of Experiments : Analysis of C.R.D., R.B.D. and L.S.D. with one observation per cell.

Practical

Simple problem based on probability, Simple problems based on Binomial, Poisson and Normal distribution. Problem based on area tables of Normal distribution. Draw simple random-sample of size 'n' from a given population of size 'N' with and without replacement scheme and obtain the estimate of (i) population mean (ii) population variance and (iii) standard error. Standard normal deviate tests for testing (i) $\mu = \mu_0$, (ii) $\mu_1 = \mu_2$, 't'-test for testing (i) $\mu = \mu_0$, (ii) $\mu_1 = \mu_2$, Confidence interval for means, for small and large samples. Chi-square test for goodness of fit. Chi-square test for independence of two attributes, 2x2, r x s contingency table and Yates' correction . Fitting of Regression line (i) $Y = a+bX$ and test for $\square_{yx} = 0$ (ii) $Y = a+b_1x_1 + b_2x_2$. Partial correlation coefficients and its tests of significance. Multiple correlation coefficient and its test by F-test

Suggested Readings

- Gupta SC & Kapoor VK. 2006. *Fundamentals of Mathematical Statistics*. Sultan Chand & Sons.
- Gupta SC. 2006. *Fundamentals of Statistics*. Himalaya Publ. House.
- Panse VG & Sukhatme PV. 1985. *Statistical Methods for Agricultural Workers*. ICAR.
- Rao GN. 2007. *Statistics for Agricultural Science*. Oxford & IBH.
- Snedecor GW & Cochran WG. 1968. *Statistical Methods*. Oxford & IBH.
- Sukthame & Ashok C. 1984. *Sampling Theories and Surveys with Application*. 3rd Ed. ICAR.

HDFS 515

RESEARCH METHODS AND TECHNIQUES IN HUMAN DEVELOPMENT AND FAMILY STUDIES 2+1

Objective

To train students in methods and techniques of research used in human development family dynamics

Theory

UNIT I

Introduction to research methods – classification by purpose and method. Selection of research methods – Sources of information, formulation of statement of the research problem, development of hypothesis, preparation and evaluation of a research problem. Sampling techniques- definition purpose, sampling methods. Selection of sample, determination of sample size, avoidance of sample bias. Variables – definition, types, selection of variables.

UNIT II

Measurements - purpose and process, types of instruments, scales, characteristics such as reliability, validity, standardization, developmental norms, types of standardized tests available, selection of a test and administration.

UNIT III

Research methods and procedures for Historical method, Descriptive method, Correlation method, Casual-comparative method, Experimental method.

UNIT IV

Pre-analysis procedures- scoring, coding and tabulation. Use of appropriate statistical procedures- descriptive statistics, inferential statistics. Interpretation of statistical results.

Practical

Selection of problem, developing Objective, hypotheses, sampling techniques, developing tools as per the Objective, developing a conceptual framework for the problem, data collection, report writing and presentation.

Suggested Readings

Gay LR. *Educational Research Competencies for Analysis and Application*.
Kerlinger. *Research Methods in Behavioural Sciences*.

Ph. D.

HSC 600

RESEARCH PROJECT MANAGEMENT

2+1

Objective

To enable the students to prepare and execute research project and develop skill in managing research data, its interpretation, report writing, popular communication and research paper writing.

Theory

Importance of research in Home Science; Research Management-Concept, process, elements and characteristics; Research methodologies for field and laboratory studies- problem selection, research designs, sampling, data collection, statistical methods - their uses and limitations; Criteria for selecting research project; planning project proposal- statement of problem and its justification and implication. Technical plan of work, time estimation and scheduling, preparing project work flow, resource requirement- human, material and others, cost estimation and budget; project review techniques; project estimation and evaluation; reporting results of research; holistic and interdisciplinary approach to research management; data processing- collection, statistical analysis, interpretation of results and drawing generalizations; funding agencies for research project- different national and international agencies, guidelines for preparing the proposal; project appraisal techniques and SWOT analysis, conflicts- concept, process and types; managing conflicts, resource smoothing in research project; factors influencing research efficiency; monitoring and control of research project- concept and techniques; scientific research communication- writing research paper, popular articles and technical report.

Practical

Critical review and SWOT analysis of any two research projects with respect to – Research Objective and design, Implementation, Monitoring

and evaluation system and impact assessment; Planning a research project in view of funding agency; Writing at least one – Research paper, Review paper, Popular article, Technical report.

Suggested Readings

- Bajpai SR. 1969. *Methods of Social Survey and Research*. Kitab Ghar.
Best W. 1983. *Research in Education*. 4th Ed. Prentice Hall of India.
Carter Good V. 1966. *Essential of Education Research*. Appleton Century Profits, Educational Division, Mereelith Corp.
Kaul L. 1984. *Methodology of Educational Research*. Vikas Publ.
Kerlinger F. 1973. *Foundations of Behavioural Research*. Rinehart Winetons.

STAT 600 DATA PROCESSING 1+1

Objective

To develop understanding about data processing techniques and enable students in handling, analyzing and presentation of data.

Theory

Data processing- Concept and technique, Graphical presentation of data, Computer application in data processing.

Practical

Practicing various techniques of data processing and presentation of data through computer.

Suggested Readings

- Bajpai SR. 1969. *Methods of Social Survey and Research*. Kitab Ghar.
Carter Good V. 1966. *Essential of Education Research*. Appleton Century Profits, Educational division, Mereelith Corp.

COMPULSORY NON-CREDIT COURSES

(Compulsory for Master's programme in all disciplines; Optional for Ph.D. scholars)

CODE	COURSE TITLE	CREDITS
PGS 501	LIBRARY AND INFORMATION SERVICES	0+1
PGS 502	TECHNICAL WRITING AND COMMUNICATIONS SKILLS	0+1
PGS 503 (e-Course)	INTELLECTUAL PROPERTY AND ITS MANAGEMENT IN AGRICULTURE	1+0
PGS 504	BASIC CONCEPTS IN LABORATORY TECHNIQUES	0+1
PGS 505 (e-Course)	AGRICULTURAL RESEARCH, RESEARCH ETHICS AND RURAL DEVELOPMENT PROGRAMMES	1+0
PGS 506 (e-Course)	DISASTER MANAGEMENT	1+0

Course Contents

PGS 501 LIBRARY AND INFORMATION SERVICES 0+1

Objective

To equip the library users with skills to trace information from libraries efficiently, to apprise them of information and knowledge resources, to carry out literature survey, to formulate information search strategies, and to use modern tools (Internet, OPAC, search engines etc.) of information search.

Practical

Introduction to library and its services; Role of libraries in education, research and technology transfer; Classification systems and organization of library; Sources of information- Primary Sources, Secondary Sources and Tertiary Sources; Intricacies of abstracting and indexing services (Science Citation Index, Biological Abstracts, Chemical Abstracts, CABI Abstracts, etc.); Tracing information from reference sources; Literature survey; Citation techniques/Preparation of bibliography; Use of CD-ROM Databases, Online Public Access Catalogue and other computerized library services; Use of Internet including search engines and its resources; e-resources access methods.

PGS 502 TECHNICAL WRITING AND COMMUNICATIONS SKILLS 0+1

Objective

To equip the students/scholars with skills to write dissertations, research papers, etc.
To equip the students/scholars with skills to communicate and articulate in English (verbal as well as writing).

Practical

Technical Writing - Various forms of scientific writings- theses, technical papers, reviews, manuals, etc; Various parts of thesis and research

communications (title page, authorship contents page, preface, introduction, review of literature, material and methods, experimental results and discussion); Writing of abstracts, summaries, précis, citations etc.; commonly used abbreviations in the theses and research communications; illustrations, photographs and drawings with suitable captions; pagination, numbering of tables and illustrations; Writing of numbers and dates in scientific write-ups; Editing and proof-reading; Writing of a review article. **Communication Skills** - Grammar (Tenses, parts of speech, clauses, punctuation marks); Error analysis (Common errors); Concord; Collocation; Phonetic symbols and transcription; Accentual pattern: Weak forms in connected speech: Participation in group discussion: Facing an interview; presentation of scientific papers.

Suggested Readings

- Chicago Manual of Style*. 14th Ed. 1996. Prentice Hall of India.
Collins' Cobuild English Dictionary. 1995. Harper Collins.
 Gordon HM & Walter JA. 1970. *Technical Writing*. 3rd Ed. Holt, Rinehart & Winston.
 Hornby AS. 2000. *Comp. Oxford Advanced Learner's Dictionary of Current English*. 6th Ed. Oxford University Press.
 James HS. 1994. *Handbook for Technical Writing*. NTC Business Books.
 Joseph G. 2000. *MLA Handbook for Writers of Research Papers*. 5th Ed. Affiliated East-West Press.
 Mohan K. 2005. *Speaking English Effectively*. MacMillan India.
 Richard WS. 1969. *Technical Writing*. Barnes & Noble.
 Robert C. (Ed.). 2005. *Spoken English: Flourish Your Language*. Abhishek.
 Sethi J & Dhamija PV. 2004. *Course in Phonetics and Spoken English*. 2nd Ed. Prentice Hall of India.
 Wren PC & Martin H. 2006. *High School English Grammar and Composition*. S. Chand & Co.

PGS 503
(e-Course)

**INTELLECTUAL PROPERTY AND ITS
MANAGEMENT IN AGRICULTURE**

1+0

Objective

The main objective of this course is to equip students and stakeholders with knowledge of intellectual property rights (IPR) related protection systems, their significance and use of IPR as a tool for wealth and value creation in a knowledge-based economy.

Theory

Historical perspectives and need for the introduction of Intellectual Property Right regime; TRIPs and various provisions in TRIPS Agreement; Intellectual Property and Intellectual Property Rights (IPR), benefits of securing IPRs; Indian Legislations for the protection of various types of Intellectual Properties; Fundamentals of patents, copyrights, geographical indications, designs and layout, trade secrets and traditional knowledge, trademarks, protection of plant varieties and farmers' rights and bio-diversity protection; Protectable subject matters, protection in biotechnology, protection of other biological materials, ownership and period of protection; National Biodiversity protection initiatives; Convention on Biological Diversity; International Treaty on Plant Genetic Resources for Food and Agriculture; Licensing of technologies, Material

transfer agreements, Research collaboration Agreement, License Agreement.

Suggested Readings

- Erbisch FH & Maredia K. 1998. *Intellectual Property Rights in Agricultural Biotechnology*. CABI.
- Ganguli P. 2001. *Intellectual Property Rights: Unleashing Knowledge Economy*. McGraw-Hill.
- Intellectual Property Rights: Key to New Wealth Generation*. 2001. NRDC & Aesthetic Technologies.
- Ministry of Agriculture, Government of India. 2004. *State of Indian Farmer*. Vol. V. *Technology Generation and IPR Issues*. Academic Foundation.
- Rothschild M & Scott N. (Ed.). 2003. *Intellectual Property Rights in Animal Breeding and Genetics*. CABI.
- Saha R. (Ed.). 2006. *Intellectual Property Rights in NAM and Other Developing Countries: A Compendium on Law and Policies*. Daya Publ. House.
- The Indian Acts - Patents Act, 1970 and amendments; Design Act, 2000; Trademarks Act, 1999; The Copyright Act, 1957 and amendments; Layout Design Act, 2000; PPV and FR Act 2001, and Rules 2003; National Biological Diversity Act, 2003.*

PGS 504

BASIC CONCEPTS IN LABORATORY TECHNIQUES

0+1

Objective

To acquaint the students about the basics of commonly used techniques in laboratory.

Practical

Safety measures while in Lab; Handling of chemical substances; Use of burettes, pipettes, measuring cylinders, flasks, separatory funnel, condensers, micropipettes and vascupets; washing, drying and sterilization of glassware; Drying of solvents/chemicals. Weighing and preparation of solutions of different strengths and their dilution; Handling techniques of solutions; Preparation of different agro-chemical doses in field and pot applications; Preparation of solutions of acids; Neutralisation of acid and bases; Preparation of buffers of different strengths and pH values. Use and handling of microscope, laminar flow, vacuum pumps, viscometer, thermometer, magnetic stirrer, micro-ovens, incubators, sandbath, waterbath, oilbath; Electric wiring and earthing. Preparation of media and methods of sterilization; Seed viability testing, testing of pollen viability; Tissue culture of crop plants; Description of flowering plants in botanical terms in relation to taxonomy

Suggested Readings

- Furr AK. 2000. *CRC Hand Book of Laboratory Safety*. CRC Press.
- Gabb MH & Latchem WE. 1968. *A Handbook of Laboratory Solutions*. Chemical Publ. Co.

PGS 505
(e-Course)

**AGRICULTURAL RESEARCH, RESEARCH ETHICS
AND RURAL DEVELOPMENT PROGRAMMES**

1+0

Objective

To enlighten the students about the organization and functioning of agricultural research systems at national and international levels, research ethics, and rural development programmes and policies of Government.

Theory

UNIT I

History of agriculture in brief; Global agricultural research system: need, scope, opportunities; Role in promoting food security, reducing poverty and protecting the environment; National Agricultural Research Systems (NARS) and Regional Agricultural Research Institutions; Consultative Group on International Agricultural Research (CGIAR): International Agricultural Research Centres (IARC), partnership with NARS, role as a partner in the global agricultural research system, strengthening capacities at national and regional levels; International fellowships for scientific mobility.

UNIT II

Research ethics: research integrity, research safety in laboratories, welfare of animals used in research, computer ethics, standards and problems in research ethics.

UNIT III

Concept and connotations of rural development, rural development policies and strategies. Rural development programmes: Community Development Programme, Intensive Agricultural District Programme, Special group – Area Specific Programme, Integrated Rural Development Programme (IRDP) Panchayati Raj Institutions, Co-operatives, Voluntary Agencies/Non-Governmental Organisations. Critical evaluation of rural development policies and programmes. Constraints in implementation of rural policies and programmes.

Suggested Readings

- Bhalla GS & Singh G. 2001. *Indian Agriculture - Four Decades of Development*. Sage Publ.
- Punia MS. *Manual on International Research and Research Ethics*. CCS, Haryana Agricultural University, Hisar.
- Rao BSV. 2007. *Rural Development Strategies and Role of Institutions - Issues, Innovations and Initiatives*. Mittal Publ.
- Singh K.. 1998. *Rural Development - Principles, Policies and Management*. Sage Publ.

PGS 506
(e-Course)

DISASTER MANAGEMENT

1+0

Objectives

To introduce learners to the key concepts and practices of natural disaster management; to equip them to conduct thorough assessment of hazards, and risks vulnerability; and capacity building.

Theory

UNIT I

Natural Disasters- Meaning and nature of natural disasters, their types and effects. Floods, Drought, Cyclone, Earthquakes, Landslides, Avalanches,

Volcanic eruptions, Heat and cold Waves, Climatic Change: Global warming, Sea Level rise, Ozone Depletion

UNIT II

Man Made Disasters- Nuclear disasters, chemical disasters, biological disasters, building fire, coal fire, forest fire. Oil fire, air pollution, water pollution, deforestation, Industrial wastewater pollution, road accidents, rail accidents, air accidents, sea accidents.

UNIT III

Disaster Management- Efforts to mitigate natural disasters at national and global levels. International Strategy for Disaster reduction. Concept of disaster management, national disaster management framework; financial arrangements; role of NGOs, Community-based organizations, and media. Central, State, District and local Administration; Armed forces in Disaster response; Disaster response: Police and other organizations.

Suggested Readings

- Gupta HK. 2003. *Disaster Management*. Indian National Science Academy. Orient Blackswan.
- Hodgkinson PE & Stewart M. 1991. *Coping with Catastrophe: A Handbook of Disaster Management*. Routledge.
- Sharma VK. 2001. *Disaster Management*. National Centre for Disaster Management, India.